JULY, 1956

Beginning . . .
The
JASPER
STORY
p. 20

WOOD and Wood Products

THE NATIONAL MANAGEMENT AND PRODUCTION MAGAZINE OF THE WOOD INDUSTRY

A Vance PUBLICATION

FEATURES IN THIS ISSUE

- Automatic Line Bonds Shorts into Mouldings
- "Hatching Ground for Production Ideas"
- Mold Wood Waste Into Hobby Horses
- 9 Ways to Control Noise in Woodworking
- Trends—Production Line—Foreign Woods—New Products

WOOD SALUTES
Lawrence D. Kellogg

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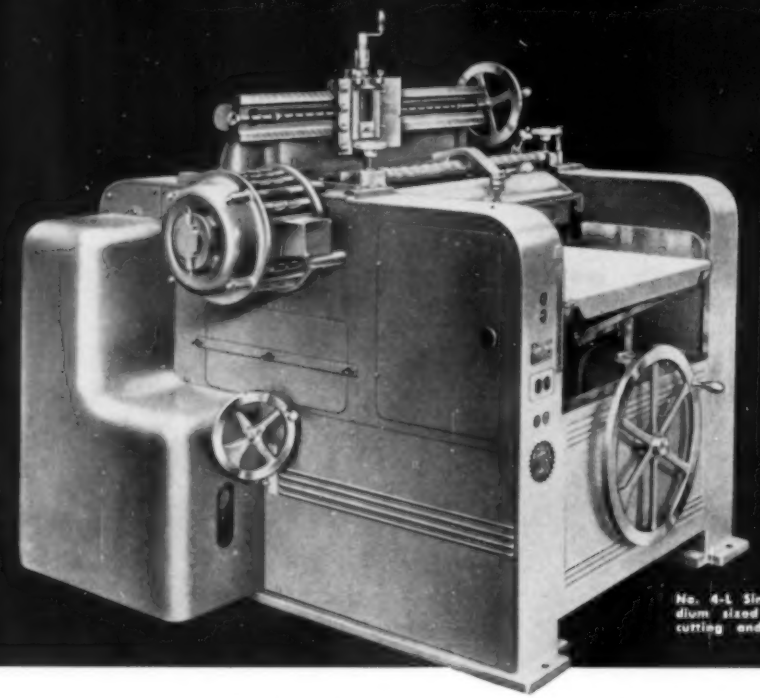

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Unless yours is a modern, up-to-the-minute planer, a current BUSS Cabinet Surface Planer in your shop would quickly demonstrate savings which would repay its cost many times over in a relatively short period of time. In the first place it would give you planing of finest quality at three or four times the speed of older planers . . . and that means vastly increased production plus the savings in clean-up operations that quality planing effects. Secondly, you would find that set-up and change-over time would be cut 60 to 70% by our exclusive semi-automatic controls which make absolutely accurate adjustments a matter of seconds instead of long and tedious operations of varying accuracy. Third, you would find that knife grinding and jointing is reduced to a small fraction of the time required on the older planers. And yet, these are only some of the features that make it much cheaper to own modern BUSS Planers than to do without them. Why not investigate? Write for bulletins, now!

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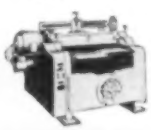

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% CYMEL 401 (of Resin Solids)	Maximum Assembly Time (Hours)		Durability (Boil Resistance — Hours Without Delamination)	
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0	less than 3	less than 3	less than ½	less than ½
5	12 — 15	10 — 12	1	1
10	15 — 20	20 — 24	2	2
15	20 — 24		3	
20	20 — 24		4	

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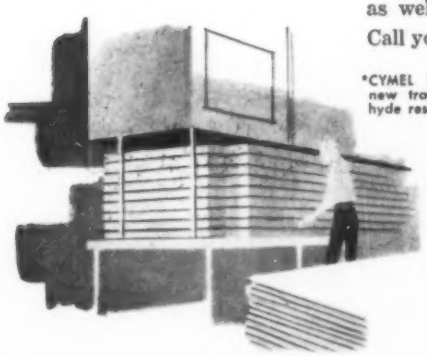

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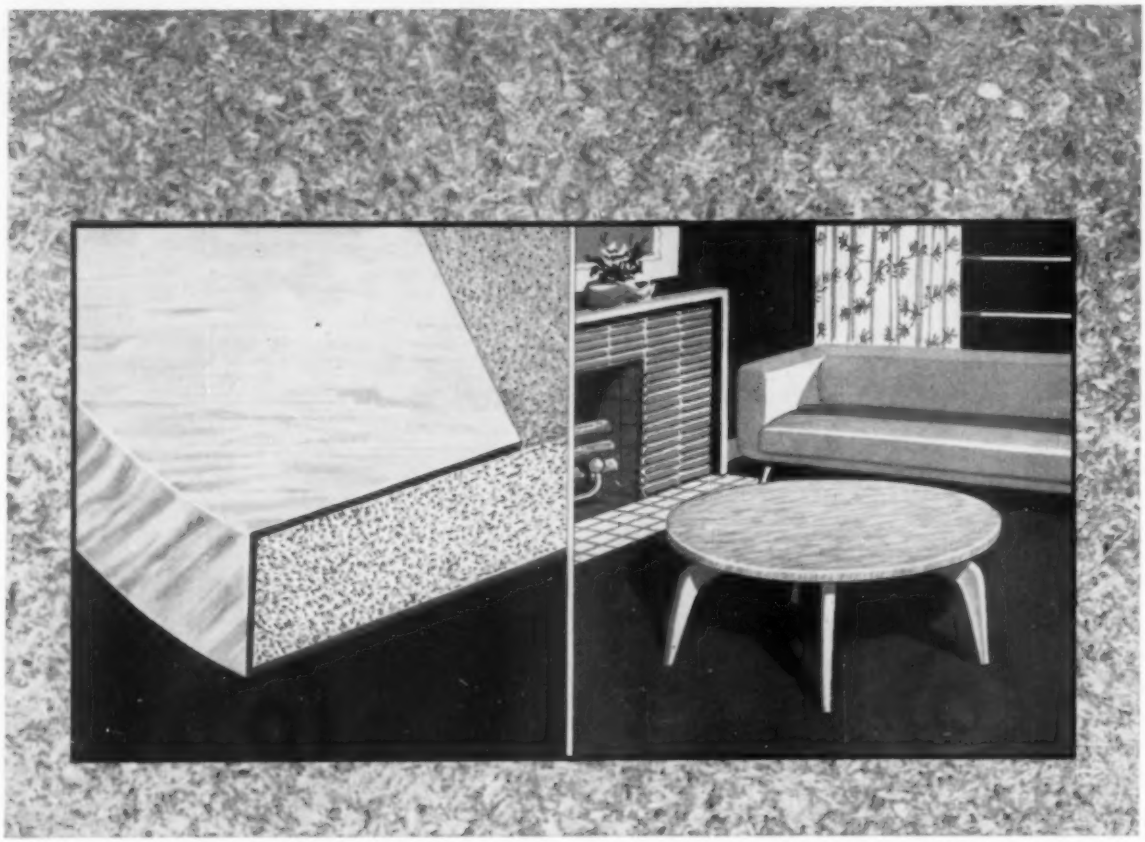

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Weyerhaeuser 4-Square Particle Board is highly recommended as a core material for coffee table and dinette tops; for sink and counter tops; for furniture front, end panels and tops; for cabinet doors and wardrobe sliding doors. Takes a variety of edge treatments including metal, plastic or wood veneers. Helps reduce waste because cut-offs can be butt and edge glued.

4-Square Particle Board comes in densities for both 3 and 5 ply use; thicknesses from $\frac{3}{8}$″ to 1″. Standard panels are 4′ x 8′; smaller panels can be furnished cut to your specification for size. Write today for sample and prices.

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JULY, 1956

Vol. 61, No. 7

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Progress and H. B. Smith Machine Co. go together. Continuous development and engineering have resulted in the highest quality sanding obtainable.

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VOL. 61, NO. 7

WOOD and Wood Products

JULY, 1956

INDUSTRY NEWS... ...AND TRENDS

RESEARCH

WOOD Awards Presented At F.P.R.S. National Meeting

Winners of the seventh WOOD Awards, sponsored by WOOD & WOOD PRODUCTS, for outstanding research by graduate students in forestry and wood technology, were Selwyn P. Fox, Ottawa, Canada, and Norman C. Higgins, Lansing, Mich. Mr. Fox won $350 and certificate for his paper on "An Investigation Into the Effects of Certain Variables in Scarf-Jointed Timber Laminations," and Mr. Higgins won $150 and certificate for "The Effect of Species on the Relative Humidity-Equilibrium Moisture Content Relationship."

The awards were presented at the official luncheon, June 5, during the Forest Products Research Society annual meeting in Asheville, N. C.

Judges were Dr. Herbert O. Fleischer, U. S. Forest Products Laboratory, Madison, Wis.; Col. J. H. Jenkins, director, Forest Products Laboratories of Canada; and John H. Brown, research department, Potlatch Forests, Inc., Lewiston, Idaho. Dr. A. J. Panshin, Michigan State College, East Lansing, chairman of the F.P.R.S. Education Committee which conducted the competition, reported that all 12 entries were of such exceptionally high quality it was difficult to discriminate, and that this was the most successful WOOD Awards competition since its inception in 1948.

Selwyn Fox, who presented the highlights of his paper at the afternoon gluing session, June 5, is 26 years old and employed as a timber engineer by the Canadian Institute of Timber Construction, Ottawa. He received his B.A.S. degree with honors in forest engineering from the University of British Columbia, after receiving the Wm. MacKenzie Swan Memorial Bursay, the Phil Wilson Bursay, and the H. R. MacMillan Prize. He then worked as assistant logging engineer with British Columbia Forest Products Ltd., until 1954 when he began graduate studies at the University of Toronto, winning the Canadian Lumbermen's Assn. Timber Research Fellowship twice.

Fox and Higgins Win WOOD Awards

EXAMINING THE WOOD AWARD certificates presented at the Forest Products Research Society meeting at Asheville, N. C., are (front row) Selwyn P. Fox, first award winner who also received $350, J. F. Koellisch, editor and manager, WOOD AND WOOD PRODUCTS, who presented the awards, Norman C. Higgins, second award winner who also received $150, (back row) Dr. Herbert O. Fleischer, U. S. Forest Products Laboratory, Madison, Wis., chairman of the WOOD award judges, and Dr. A. J. Panshin, Michigan State University, chairman, F.P.R.S. Education Committee

Norman Higgins is assistant professor at Michigan State University, Lansing, in the Department of Forest Products. He was graduated from the University of New Hampshire in 1938, and will receive his Master of Forestry degree in wood utilization this summer from Pennsylvania State University. Professionally, Mr. Higgins, who is 41, has served as dry kiln superintendent for the J. H. Monteath Co., New York City; supervisor of dry kilns and adhesives research for Russell Wood Heel Co., Plaistow, N. H., and Service Wood Heel Co., Lawrence, Mass.; and in varied other capacities connected with forestry.

The 1956 entries were received from graduate students at the Universities of Minnesota, Idaho, Laval, Toronto, Iowa State College, Yale University (2), North Carolina State College, Alabama Polytechnic Institute, State University of New York, Massachusetts Institute of Technology, and Pennsylvania State University.

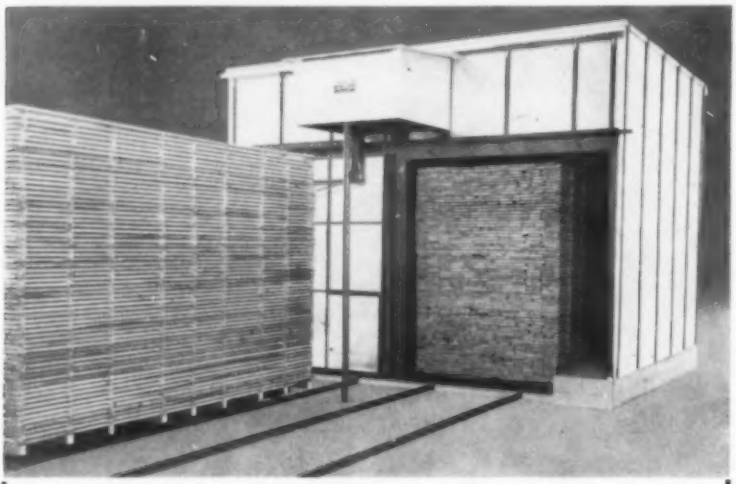
UTILIZATION

THE EXTENT OF THE GROWTH of the movement for greater utilization of wood waste in the manufacture of chipboard, particle board and other

salable by-products, which has been described as "the hottest thing to hit the wood industry in years," was illustrated by a statement made to one of the editors of WOOD & WOOD PRODUCTS during the recent Forest Products Research Society meeting in Asheville, N. C.

According to this information, there are now in operation, under construction, or on the planning boards a total of 58 chipboard and particle board plants in the United States. Many of them, of course, are now in production, and it is expected that by 1960 these 58 plants will be turning out close to 600 million sq. ft. of board per year (3/4 in. basis). It was further pointed out that in addition to these 58 plants there undoubtedly will be others set up by 1960 which will materially increase this anticipated output.

Basing this statement on a recent survey made by an important factor in the field whose identity could not be revealed at this time, the expert in question gave fir plywood producers something to think about when he stated that "those in the know predict that properly constructed chipboard or particle board may eventually take over 60% of fir plywood's 3/4 in. market."



Moore PREFAB Kiln Building—

Complete—Ready To Erect

This new Moore Prefab building design is ideal for small and medium lumber and woodworking plants. Here's why:

FLEXIBILITY—Building can be moved any time to a new location.

"WRAP-AROUND" CORNERS eliminate leaky corner joints.

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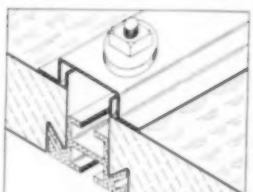
TURN-KEY JOB—Completely prefabricated, ready to install on foundation.

Write today for bulletin describing the Moore Prefab Kiln Building.



New Moore "Wedge-Seal" design eliminates vapor leakage at panel joints—weakest point in most prefab construction.

MOORE DRY KILN COMPANY

Oldest and Largest Manufacturers of Dry Kilns and Veneer Dryers

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FURNITURE

FURNITURE MARKET in Chicago reported slackening buying, but even though second half of 1956 may drop a bit, the first half was so good that 1956 may be the best year yet.

This summer's market is also reported as the most competitive ever—with manufacturers with well rounded and new designs receiving the major number of orders. In fact, Wallace O. Oilman, general manager, Chicago Merchandise Mart, states there are more new goods in this market than at any one since 1949. Prices due to the competitive situation—and despite rising costs—are about the same.

FINISHES AND COLOR are furniture plants biggest headaches, according to recent N.A.F.M. national survey. At the top of the list of serious problems are: (1) color control; (2) recruiting, training and supervising finishing personnel; (3) keeping up to date with color and finishing trends; (4) reducing unit cost of furnishings and time of finishing operation.

FURNITURE SHIPMENTS for the first five months of 1956 increased about 18% over the record year of 1955, Seidman & Seidman, industry analysts, announced.

The increase in furniture shipments was "far more than the increase achieved by industry in general," the analysts said.

Record shipments in 1955 totaled $1,828,000,000, about $86 million more than the previous record volume in 1953 and 15% over 1954. Manufacturers' profits after taxes were up 40% over 1954, to about 4.17% of sales.

CONSTRUCTION

NEW CONSTRUCTION put in place in May expanded seasonally to $3.7 billion, matching the high for the month reached last year, the Commerce and Labor Departments report.

May's construction topped April by 9% and brought the 1956 total so far to a record $15.8 billion. Outlays for the first five months of 1955 totaled $15.6 billion.

On a seasonally adjusted basis, construction expenditures in May rose to an annual rate of $43.6 billion. This compares with an annual rate of $43.1 billion last January and actual outlays of $43 billion in 1955.

The expansion in May occurred in just about all types of construction.

HOME BUILDERS are being shown the advantages of clear-span wood roof trusses in residential construction, and given step-by-step details in

$12,000 YEARLY SAVING

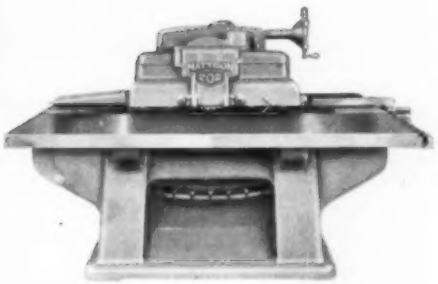
ripping on the Mattison 202

Morgan Manufacturing Co., Black Mountain, N. C., has discovered many advantages in using Mattison Model 202 Straight-Line Rip Saws. It is possible to save $12,000 annually in ripping operations on hardwood stock. Also, these machines do straight-line ripping after which the stock is glued without going through a glue-jointer.

Morgan is one of the largest finished dimension producers in the country, operating a million dollar plant in which every phase of production makes use of the most efficient, modern equipment available.

Close analysis of production efficiency will lead to the selection of Mattison Rippers every time. The Model 202 is a precision machine capable of serving as a jointer as well as a ripper. Two jobs can be done with one machine, saving equipment and labor costs.

Ask your Mattison representative to explain the advantages of overcut construction. And remember—every Mattison woodworking machine is built to the same standard—*for finest quality work at lowest possible cost.*



8 ways to save

- Glue exposed joints directly without going through the glue-jointer. Save ⅛ in. stock on each edge.
- Single chain with one-piece jam-proof blocks under the saw allows cutting sliver edgings.
- Elimination of glue-jointer frees two men for other work. Cost per finished piece drops.
- Ample power and rigid construction mean maximum production.
- Absolute alignment of working parts is assured by hardened, wear-resisting tracks mounted on the base.
- Patented saw jointing device makes every tooth do its share of the work for smooth cuts and less frequent sharpening.
- Every practical safety device is used on the machine.
- Many Mattison machines pay for themselves in the first year or less.

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trussed rafter fabrication and handling, in a new service launched by TECO, research affiliate of the National Lumber Manufacturers Association.

The new service is bringing the "why" and "know-how" of trussed rafters to the builders home ground, without charge, through the cooperation of his local homebuilders association.

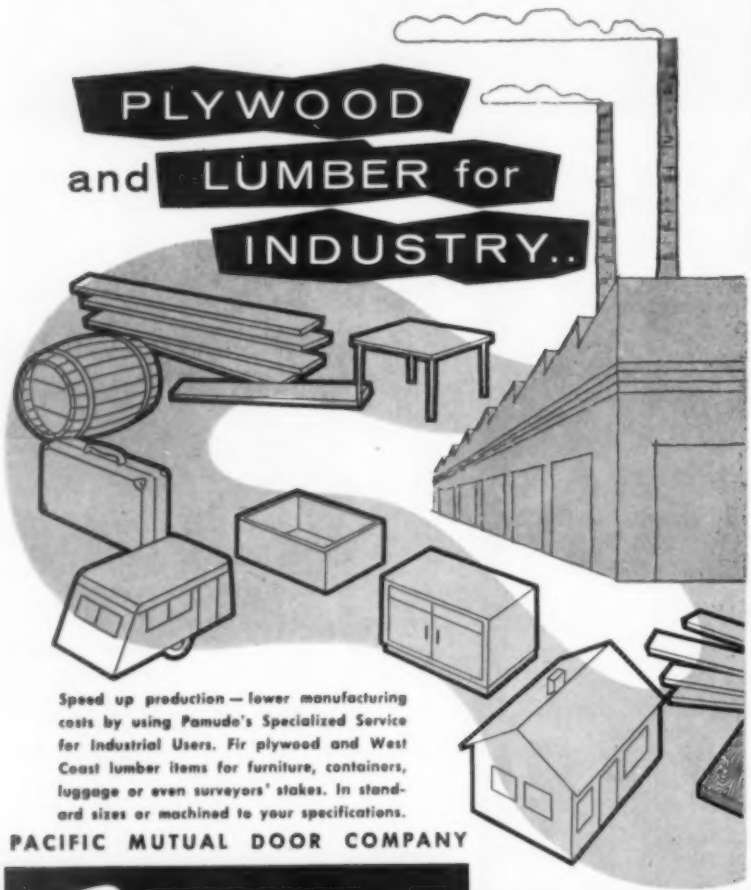
PLYWOOD-VENEER

FACE VENEERS production and shipments slacked off in April. Nearly all species shared in the decline. Nevertheless, it's been a big year. Cherry is going at a record-breaking rate—and there's a well balanced inventory.

American Walnut production exceeded shipments in April for the first time this year—but only by a small margin.

African mahogany veneer output was steady during the first four months of 1956. Rift white oak supply has improved.

PLYWOOD MILL-JOBBER problems discussed recently at the National Plywood Distributor's 14th annual convention included: (1) the desirability of standardization of hardwood plywood grades and nomenclature; (2) the factors involved in changing fir plywood production 100% to an exterior glueline; (3) desirability of a mutual program to reduce damage in transit; (4) jobber advocacy of steel strapping plywood into bundles to lower damage and increase ease of handling in and out of warehouses; (5) jobber feeling that quality has been slipping, perhaps unavoidably, due to raw material supply available but that closer "appearance" grading seems to have become necessary; (6) quality problem is opening up some markets to substitutes and competing materials; (7) jobbers point out continuing need for sizes other than 4x8, particularly the shorter lengths and narrower widths; (8) discussion of importance of buying as compared with sales and merchandising in building a successful warehouse business; (9) serious lack of communication within organizations as well as with customers and suppliers pointed out as the major problem to be corrected by meetings and conventions and by improved workings of intra- and inter-industry committees.



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LUMBER

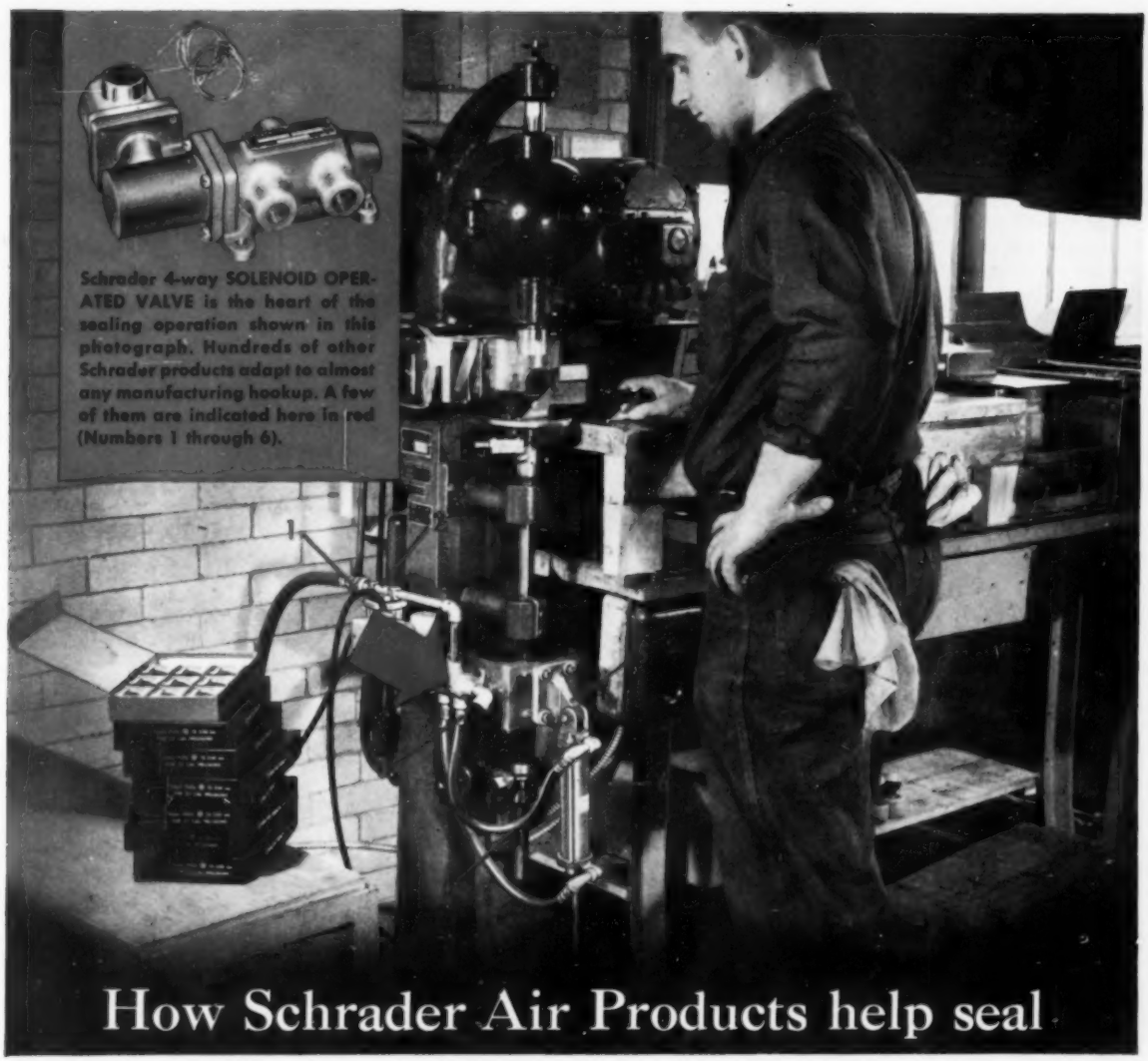
LUMBER SHIPMENTS of 480 mills reporting to the National Lumber Trade Barometer were 0.8% above production for the week ended June 9, 1956. In the same week new orders of these mills were 10.3% below production. Unfilled orders of the reporting mills amounted to 37% of stocks. For the reporting softwood mills, unfilled orders were equivalent to 18 days' production at the current rate, and gross stocks were equivalent to 46 days' production.

REDWOOD PRODUCTION and shipments for April, 1956, by 20 mills reporting to the California Redwood Assn. were: Production 59,762 M ft.; shipments 64,665 M ft.

Comparisons with figures for April, 1955, show an increase in production of 1,225 M ft. and an increase in shipments of 6,222 M ft. Production was slightly down and shipments were up from the unusual volume of March, 1956.

Redwood orders on hand as of April 30, 1956, were 105 896 M ft. as compared with 84,377 M ft. on April 30, 1955.

Redwood stocks on hand as of April 30, 1956, were 364,886 M ft. as compared with 342,808 M ft. on April 30, 1955.


Schrader 4-way SOLENOID OPERATED VALVE is the heart of the sealing operation shown in this photograph. Hundreds of other Schrader products adapt to almost any manufacturing hookup. A few of them are indicated here in red (Numbers 1 through 6).
How Schrader Air Products help seal

5000 pellet boxes per day–3 times faster!

Box sealing is a common operation performed by compressed air. Just how speedy it can be is demonstrated at a New York arms manufacturing plant, where 5000 boxes of pellets are crimped tight each day. The back-breaking job of crimping by foot power is eliminated, and the operator does not become fatigued.

Wherever operations are automated—in holding or positioning work, moving scraps or chips, or synchronizing actions—air can help. By making these steps automatic, more efficient manufacturing is achieved.

In many cases this can be done more economically with Schrader Air Products than in any other way. Upon request, Schrader engineers will assist you in planning for the most efficient use of air and in selecting the products best suited to your applications. Outline your problem to us . . . we'll be glad to help you. Or, send for the latest informative booklets which show Schrader Air Products that will help you increase production—economically.

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FOR INDUSTRIAL PRODUCTION AND CONTROL

FOREIGN WOODS

By George N. Lamb

FIDDLEWOOD

Citharexylum Fruticosum
Verbenaceae (Verbena) Family

Citharexylum (which means Fiddlewood) is a genus with some 60 species, several of which are small, medium and rarely large trees. Best known species is Citharexylum fruticosum which grows throughout the West Indies and southern Florida. The tree is slender, seldom over 30 ft. tall. It has been known in the British West Indies for over 250 years as "Fiddlewood." The term is said to be a corruption of the French name "Bois Fidele" which alludes to the strength and toughness of the timber and not because the wood was used for making musical instruments.

The wood is heavy, exceedingly hard, strong and close-grained. Specific gravity approximately .75. The heartwood is a clear bright red with light colored sapwood and with no sharp line of demarcation. It is possible that the heartwood becomes brownish on exposure to light and air, as it has been so described.

There are several other species of Citharexylum with brownish heartwood which grow in Panama, southern Brazil, Uruguay and Argentina, but having no commercial possibilities.

Other names: Cuba—Guairo santo, palo guitarro; Puerto Rico—Old Woman's bitter; Santo Domingo—Penda, pendula; Haiti—Cafe marron; Trinidad—Susanna; Mexico—Palo de violin.

Other woods called Fiddlewood: British West Indies and Central America—Bourreria sp.; British West Indies—Clerodendron sp.; British West Indies—Vitex sp.

PENDA, BROWN

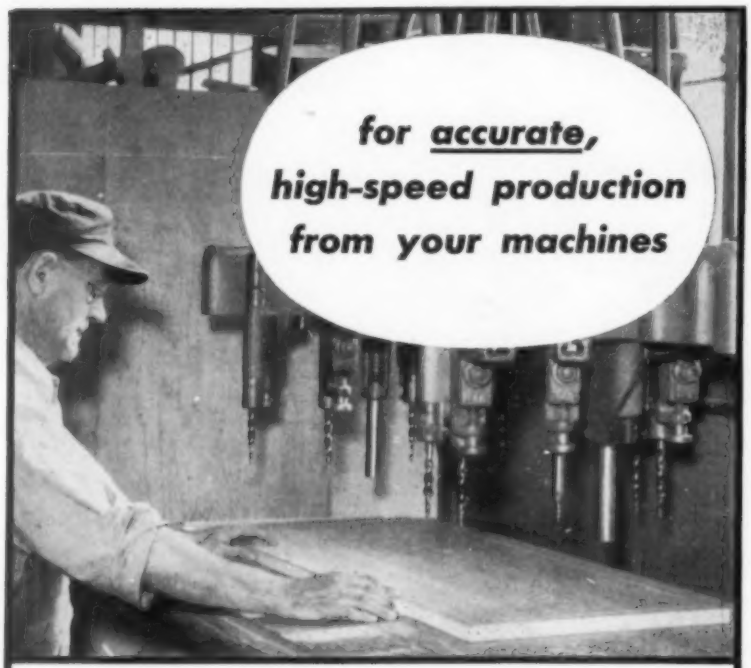
Xanthostemon Christanthus
Myrtaceae (Myrtle) Family

This tree is found in Australia in the Noosa district and surrounding area. It develops into large trees about 4 or 5 ft. in diameter and 120 ft. in height. It should be noted that this is another genus of the Myrtle family of which Eucalyptus is by far the most important. There are over 500 named species of Eucalyptus in Australia.

Penda wood is a very dark brown and is said to be almost black at times. It is very hard, strong and very heavy. Specific gravity 1.00. It is close-grained, inclined to be irregularly interlocking, and difficult to work. There is a difference of opinion on its durability. One authority claims that it is indestructible except by fire; another reports its failure in bridge work within a few years.

This tree is fairly abundant in the localities where it occurs but the overall supply is limited and unlikely to become an import item.

Other names: Southern Penda. No other woods are called Penda.



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Produced by the makers of fine woodworking machines, GREENLEE boring tools are designed and built specifically to handle fast work . . . stand up under long, hard usage . . . bore clean. Each tool has accurate sizing, sharp cutting edges, proper heat-treating to bring you high-speed, highly accurate production. Line includes Machine Bits, Machine Drills, Dowel Bits and Drills, Countersink Bits and Drills, Multi-Spur Machine Bits, Expansive Bits, Plug Cutters, Relishing Bits, and others. To get the finest results from your machines "get GREENLEE." Write today for Catalog 34-M with complete data.

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Boring Tools • Hollow Chisels and Bits • Hollow Chisel Sharpeners • And many others • Teco Grooving Tools for Timber Construction • GREENLEE Woodworking Machines include Tenoners • Saws • Mortisers • Borers • Planers • Shapers

COMING EVENTS

July 16-20: Summer market, Western Merchandise Mart, San Francisco.

Aug. 26-30: 28th annual convention, and Supply, Equipment & Fabric Fair, National Association of Furniture Manufacturers, Conrad Hilton Hotel, Chicago.

Oct. 2-4: First annual meeting, National Institute of Wood Kitchen Cabinets, Crawford Club House, Crawford Notch, N. H.

Oct. 18-19: Fourth annual convention, Architectural Woodwork Institute, LaSalle Hotel, Chicago.

Oct. 18-20: 59th annual convention, National Hardwood Lumber Association, Conrad Hilton Hotel, Chicago.

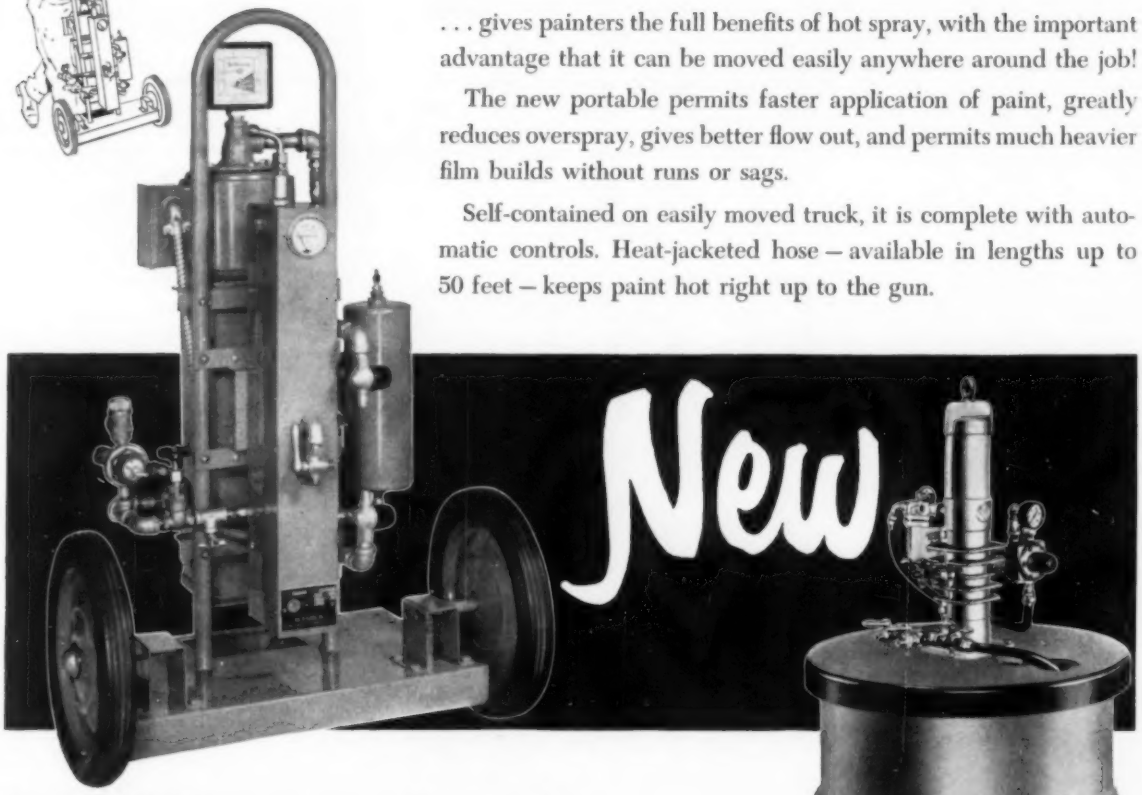
Oct. 21-24: 11th annual Protective Packaging & Materials Handling Exposition, Society of Industrial Packaging & Materials Handling Engineers, Kiel Auditorium, St. Louis.

New DeVilbiss Portable Paint Heater takes hot spray to the job...anywhere

. . . gives painters the full benefits of hot spray, with the important advantage that it can be moved easily anywhere around the job!

The new portable permits faster application of paint, greatly reduces overspray, gives better flow out, and permits much heavier film builds without runs or sags.

Self-contained on easily moved truck, it is complete with automatic controls. Heat-jacketed hose – available in lengths up to 50 feet – keeps paint hot right up to the gun.



New DeVilbiss pump makes paint delivery more efficient...more dependable

. . . specifically designed for paint handling, this new paint pump gives better performance and longer service than conventional material pumps; supplies large amounts of paint direct from original 55-gallon drums.

Completely enclosed mechanism is protected from dirt and damage. Pump includes: air-pressure regulator and gauge for controlling delivery pressure and volume, automatic oiler, safety valve, multiple-outlet manifolds for fluid and air to permit simultaneous use of several guns. Fits two-inch bung, or open-top containers when accessory lid is used.

Type P-QBF-555 pump is shown on 55-gallon drum. Also available in 10-gallon-pail model.

For further information on these new DeVilbiss products, see your supplier today, or write us direct.

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LETTERS to the EDITOR

Barker Data

Editor: At the F.P.R.S. section meeting in Vancouver last year, I was interested in the panel discussion on barkers. Recently *(see May issue)* I read your summary of the discussion, entitled "Five Northwest Mills Report Barker Cost and Operating Data", and was again impressed with the valuable information gathered at this meeting. Would it be possible to get a few extra tear sheets of the article?

—E. E. Matson, Chief
Forest Utilization Service
Portland, Ore.

Wants Gum Plywood

Editor: Please send us a list of three or four of the finest gum plywood mills in the country. Thank you.

—Harry Rubin
Gem Cabinet Co.
Miami, Fla.

Stanford Research Report

Editor: If you have reprints available for your readers on the Stanford Research Report, we would like to obtain two copies.

—P. L. Brown
Prentiss & Carlisle Co., Inc.
Bangor, Me.

Orchid for WOOD

Editor: Your magazine deserves considerable credit for advancing the particle board industry to its present very active status.

—R. H. Sides
Miller Hofft, Inc.
Richmond, Va.

Circassian Walnut

Editor: Will you kindly advise us whether it is now possible to secure Circassian walnut in either solid stock or panels? Also the sources, if they exist.

—Jackson-Williams
Thomasville, N. C.

Chipboard Manufacture

Editor: Thank you for your booklet on chipboard manufacture. I would appreciate additional information concerning where the equipment is made, some plants now in operation which I might visit, etc.

—R. M. Worthy, Jr.
Worthy Mfg. Co.
Alexander City, Ala.

Hardwood Paneling

Editor: A couple of months ago *(March issue)* you had an article in your magazine describing the manufacture of hardboard paneling made from boards, which we also manufacture. We have mislaid our magazine, so we would appreciate receiving another copy or tear sheets of the article.

—Reed City Kiln Drying Co.
Reed City, Mich.

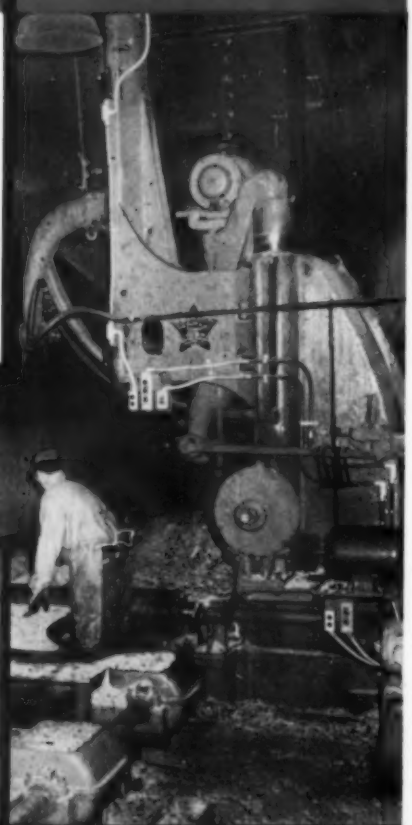
Seeks Board Product Stabilizer

Editor: In the August 1953 issue of WOOD & WOOD PRODUCTS there was an article entitled, "Wood's Dimensional Stability Promoted by New Process," written by James J. Upson, executive vice-president of Upson Co.

I am interested in the current status of this development and would like additional information concerning the use of this treatment for stabilizing

Filer & Stowell

BAND MILLS



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147 EAST BRUCHER STREET
MILWAUKEE 7, WISCONSIN

WANT THESE REPRINTS?

For readers who are interested in the specific subjects covered, we offer the following reprints free (quantities at nominal cost). Requests on business stationery will be given first preference. Please be selective, as these subjects are not necessarily related.

—The Editors

Stanford Research Report — on future demand for forest products

"How to Get Top Yield From Rough Lumber" by V. E. Holtemeyer

"Sawmill Automation" by Milton H. Mater

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Yates-American

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More production!

Maximum quality!

Minimum maintenance!

1 NEW! M-138 Automatic Knife Grinder—All-electric. For straight or concave grinding of thick or thin knives up to 38″ long.

2 M-7 Cutterhead Grinder—For grinding square heads, vise-grip side heads, and round slip-on up to 15″ long and up to a 9″ cutting circle.

3 G-89 Variety Saw—Cuts stock 4⅛″ thick with 16″ blade — 5⅛″ thick with 18″ blade. Cut-off capacity, 28″; ripping capacity, 26″.

4 No. 1 Hand Jointer—Available in widths to joint and plane stock up to 12″ and 16″ wide. Rabbets ⅝″ deep.

5 B-244 Surfacer—Works stock up to 24″ or 30″ wide, ⅛″ to 8″ thick. Surfaces stock as short as 3¼″ butted, 11″ not butted.

6 Y-1300 Scroll Band Saw—Distance from saw-blade to column, 29½″ with saw guard in place. Distance under guide, 14″.

7 Y-30 30″ Band Saw—Distance from saw blade to column, 29½″ with saw guard in place. Distance under guide, 16″.

8 Y-36 36″ Band Saw—Distance from saw-blade to column, 35½″ with saw guard in place. Distance under guide, 20″.

Send coupon for M-line bulletins.

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First with the *Finest* in woodworking machinery

Since 1883.

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Processor solves expansion problem...stores more in less space at lower cost...

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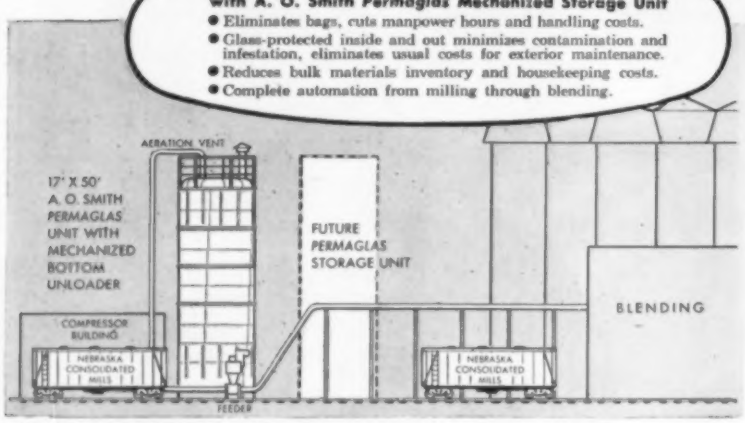
- Eliminates bags, cuts manpower hours and handling costs.
- Glass-protected inside and out minimizes contamination and infestation, eliminates usual costs for exterior maintenance.
- Reduces bulk materials inventory and housekeeping costs.
- Complete automation from milling through blending.



*Division of Nebraska Consolidated Mills Co.

with A. O. Smith Permaglas® mechanized storage unit

ALABAMA FLOUR MILLS' plant in Decatur, Ala. needed more storage space for flour . . . used in blending of different grades. Because of space limitations inside the plant, they found it more economical to install a 17' x 50' *Permaglas* Mechanical Storage unit "outside", as shown in photo at right.

As a result, this customer eliminated the cost of expensive housing because condensation, due to temperature variations outside, need not be a problem with Permaglas Storage units. And with mechanical, sweep-arm, bottom unloading the bulk handling of flour from airslide railroad cars to blending process is completely automatic. What's more, future expansion plans present no space problem with outdoor storage, utilizing *Permaglas* units.

Today, hundreds of *Permaglas* Mechanized Storage units provide low-cost, bulk materials storage and handling for feeds, sugars, grains, wood products, chemical compounds and many others.

BULK FLOUR — 17' diameter, 50' high *Permaglas* Mechanized Storage Unit, glass-protected inside and out, is used for storing bulk flour.

Mail coupon for new 6-page bulletin on Permaglas Storage Units with mechanized bottom unloader.

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Please send me complete facts about *Permaglas* Mechanized Storage Units.

Name .....

Address .....

City ..... State .....

hardboard and particle board products. Please advise sources of information or supply it, if available.

—W. H. Cooke
Pacqua, Inc.
Dillard, Ore.

Sawmill Automation

Editor: Please send me a reprint of "Sawmill Automation," by Milton H. Mater, which appeared in your October and November (1955) issues.

—Arm Guyon
Bourassa Industries, Ltd.
Portneuf, Quebec

WOOD PUZZLERS

This department is designed to help find answers to your production and sales problems. Let us know what information you need. Other readers may be able to help you.—*The Editors.*

200—Hardwood Banded Poplar Cores

We are seeking a source, preferably not over an 800 miles radius of York, Pa., of four side hardwood banded (maple, oak, and/or birch, 2 in. strips) popular cores (5/8 in to 1 1/8 in.) from 30 in. to 40 in. wide by 45 in. to 61 in. long. The quantities of a size are rarely less than 20 and not more than 100. Whose names and addresses can you suggest? *(Pa.)*

201—Birch Shorts in Varied Widths

We are manufacturers of birch interior trim, and accumulate shorts in several widths which we believe some other reader can use. Would anyone be interested in a source for 4/4 birch shorts (up to 5 ft. lengths) in approximately 1 in., 1 1/4 in., 1 5/8 in., 2 1/2 in., and 3 1/2 in.? Stock could be supplied rough or moulded. *(Wis.)*

202—Can Sell Small Wedges

In our manufacturing process, we will soon be accumulating wedge-shaped wood pieces approximately 11 in. long, 1 in. thick on the big end, and 1/4 in. thick on the small end, and in 4, 6, 8, 10, and 12 in. widths. They will be Douglas fir kiln dried. Can you suggest a market for these wedges? *(Wash.)*

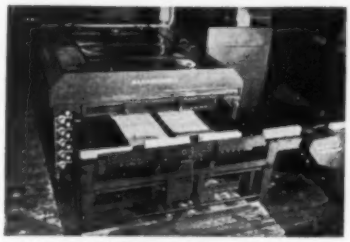
Want to Buy — or Sell Something?

Whether you want to buy—or sell—an entire plant, a single machine, available manufacturing time and facilities, an odd lot of lumber, plywood, hardboard, or what have you . . .

You get results when you advertise in the

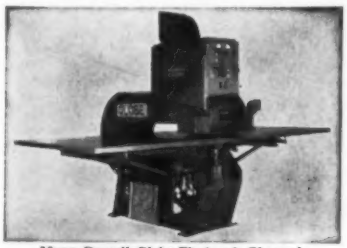
WOOD & WOOD PRODUCTS TRADING POST

See Page 84 for details

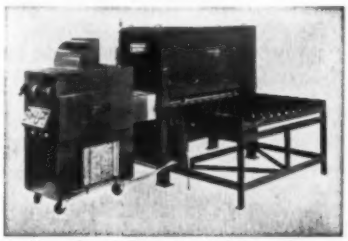


Mann-Russell Continuous Electronic Lumber Edge Gluer

Continuous Electronic Veneer Edge-Gluer



Mann-Russell-Globe Electronic Plywood Panel Patcher



Mann-Russell Electronic Scarf Gluing Press

what's your glue line?

If you edge-glue lumber, veneer, do panel repair patching, scarf plywood . . . laminate structural beams . . . do ANY type of gluing, with soft or hard woods . . . Mann-Russell can **Speed Your Production . . . Cut Costs**

No matter what **your** glue-line problems may be, Mann-Russell can offer a solution that will increase production, reduce overhead, provide greater utilization of shorts and waste stock.

Mann-Russell equipment is engineered, and single responsibility assumed, for the specific job . . . installed and serviced by factory engineers. Why not glue the **modern** way — electronically? Write, wire, or call . . .

Mann-Russell Electronics
(NORTHWEST SYNDICATE, INC.)

PLANT: South 23rd & Pacific Avenue
Tacoma 2, Washington
FUlton 1593

THE HIGHLY INFORMATIVE ARTICLE STARTING ON PAGE 25 OF THIS ISSUE

describes how the Mann-Russell Electronic Scarf Gluing Press is used profitably and successfully to scarf glue 13/16 in. Exterior grade fir plywood into panels 4 ft. wide and up to 80 ft. lengths, from standard 4 ft. x 8 ft. panels (longer panels on special order).

This illustrated feature is based on the operations of the Diamond Lumber Company of Portland, Oregon, Plywood Division Plant at Tillamook, Oregon.

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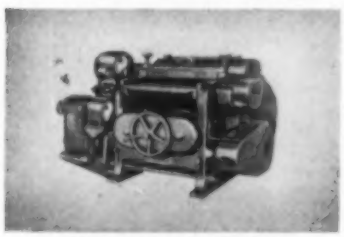
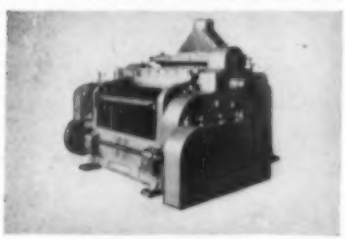
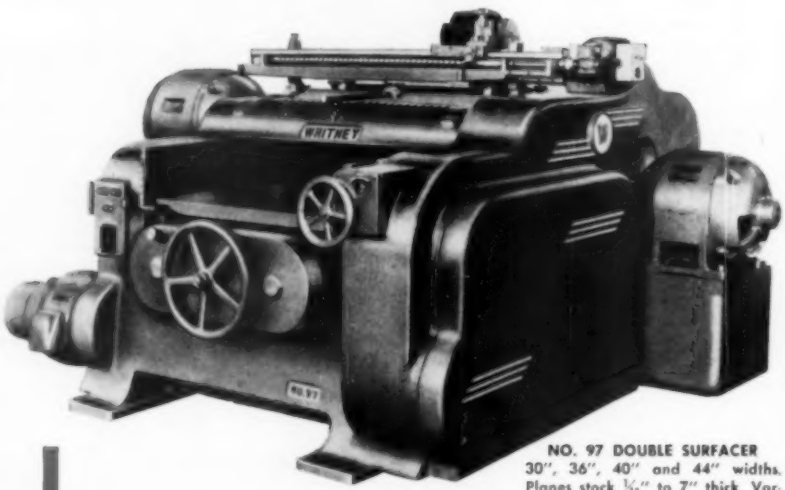
NO. 105 SINGLE SURFACER
24" width x 8". Variable Feed: 20 to 60 f.p.m. Cutterhead Motor: 7½ or 10 H.P.



NO. 32A SINGLE SURFACER
24" & 30" widths x 7⅜". No. 29A—36", 40" & 44" widths. Variable Feed to 80 f.p.m.



NO. 37 SINGLE SURFACER
Extra Heavy Duty. Widths, 32", 40", 44" and 50". Variable Feed to 100 f.p.m.



NO. 97 DOUBLE SURFACER
30", 36", 40" and 44" widths. Planes stock 3/16" to 7" thick. Variable feed: 30 to 90 f.p.m.

The hundreds of Whitney Single and Double Surface Planers in the field today enjoy an enviable record of performance and service and attest to the fine quality of construction of Whitney planers. Today Whitney Single and Double Surfacers are the finest production planers ever built by Whitney, incorporating every time-tested and proven feature gained from more than 100 years of experience and know-how in fine planer construction.

What does this mean to you, a prospective planer purchaser? It means high quality, lowest cost planing, high production, low maintenance over the years and long, trouble-free service — the safest, soundest planer investment you can make today.

Write for bulletins. Ask for bulletin WPD3 for 97 Double Surfacer or bulletin WP53 for Single Surfacers.

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Tell our advertisers you saw it in **WOOD** *and* **WOOD PRODUCTS**

This Is No Time to Retrench!

The recent luncheon talk in which that statement was made had nothing to do with the wood industry, but we can think of no more appropriate phrase for this industry as it stands today. The "renaissance of wood" is surging forward, yet it is only in its infancy. Anyone in this field who thinks the time has come to pull in his horns and "retrench" is woefully misreading the events and trends of the times.

On every hand we see signs of the revival of enthusiasm for wood, and throughout the industry we watch and applaud the decisions and actions of wood industry management as this enthusiasm rubs off on them, as they realize it is here to stay and grow, and as they take the necessary steps to put their houses in order so that they may share in the big revival.

No longer is a machine or a way of doing things tolerated "because it was O.K. for daddy or for granddaddy." Today, in this field as in other important industries, there is a growing acceptance and practical application of the philosophy of famed inventor Charles F. Kettering: *"If you are doing anything the same way you have been doing it for 10 years, the chances are that you are doing it wrong."*

A case in point is the story of the great woodworking community of Jasper, Ind., which Wood & Wood Products is proud to present in a series of special articles beginning in this issue. Here are veteran woodworkers to whom traditional craftsmanship and quality are as dear as they were to their granddaddies, but they have found out that those attributes are enhanced rather than diminished by skillful combination with new ideas, new methods, new machines and equipment.

They have found out, for example, that conveyorization helps to relieve a skilled craftsman of the backbreaking chores of material handling and thus prolongs his usefulness as it eases his manual labors and permits closer concentration on quality workmanship. They have found out, too, that these "new-fangled things" save money as well as men.

Listen to one of Jasper's leaders as he puts into a single terse statement the feelings of the men who run this great woodworking community's busy plants:

"We believe that our investment in mechanical improvements in our plants is the only way we can keep production costs down, selling prices at competitive levels, and employment high. So far as I know, a better method or a better machine has never cost one of our workers a job. On the contrary, the efficiencies obtained have meant more jobs at other points."

It's such men who will win back the markets wood has temporarily lost, who will build wood's present markets to higher levels, and who will develop and sell new markets for fine wood products. These are the kind of men who are leading the wood industry to new heights of achievement so fast and so effectively that it has set the heads of outside observers spinning.

It is such men, too, who don't delude themselves into believing that what they are doing to modernize, conveyorize or mechanize holds any vital "trade secrets." In Jasper, our first article points out, "there is no attempt to hide cost-cutting methods. What is good for one apparently is free to all if usable. Maybe this is why Jasper enterprises succeed. Maybe this is a golden rule which helps in this decade. At any rate, it has worked and is working at Jasper." Indeed, this is no time to retrench; nor is it a time for "trade secrets."

The Jasper Story . . .

Part 1. CONVEYORIZATION TAKES OVER IN MACHINE ROOM OPERATIONS as 17 wood product firms in famous southern Indiana community move to combine traditional craftsmanship and quality with modern methods, materials and machines to move ahead in "renaissance of wood"

Five Articles in "The Jasper Story"

WOOD & WOOD PRODUCTS begins herewith a series of special articles which tell the fascinating, practical story of an entire community that depends for its livelihood mainly upon wood. It's the story of Jasper, Indiana, a community that started with a single small woodworking plant 80 years ago and, adhering steadfastly to one basic raw material — wood — now numbers some 17 thriving operations whose furniture, cabinets, desks, chairs, boats and numerous other wood products are widely noted for fine craftsmanship and quality.

This is no "history". It's the story of what's happening today in Jasper's wood industries as the proud, expert craftsmen who built up the town and the world-wide reputation of its output, and their able, carefully trained and educated sons, turn to modern methods, materials, machines, mechanization and conveyorization—yes, even automation to a degree—and combine them with Jasper's traditional skills to keep constantly moving ahead as they share in the "renaissance of wood."

Conveyorization in the mill room is the subject of the first article herewith. Other articles to follow are:

- **August — Gluing and Related Operations.**
- **September — Assembling and Finishing.**
- **October — Management (including inspection and quality control, labor relations, training, safety, materials handling, etc.)**
- **November — Marketing (styling, packaging, pool car distribution, over-the-road equipment, dealer relations, market research, advertising and promotion.)**

Watch for these articles and see how "The Jasper Story" can work for you as it brings, from a single wood community, the latest ideas and methods which have passed the acid test of a group of wood industry leaders who have long rated with the best and most successful anywhere.—The Editors.

By EARL WALLIS

ONE SUMMER AFTERNOON in 1876 Frank Joseph closed up his bank and headed down the street for a final meeting with his friends Sebastian Kuebler, merchant, and John Gramelspacher, furniture maker. When the three men parted late that night they had not only established the destiny of Jasper, Ind., but had also made a vigorous start along the 80 year old course that was to lead to outstanding leadership among American communities in the manufacture of wood office furniture and equipment.

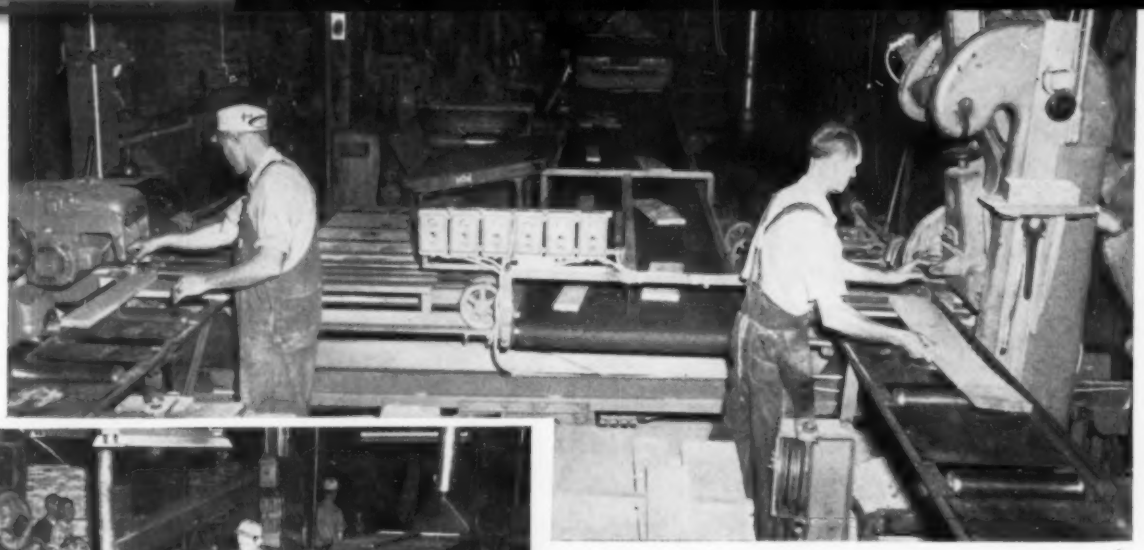
What the three men actually did was organize a company known as the Jasper Furniture Co. They did it to make money for themselves by the time honored method of manufacturing wood furniture out of lumber from local forests. A secondary objective was to create a home market for the rich timber resources of surrounding DuBois County, to bring about more employment and, hopefully, to keep more money circulating in the community.

The plan succeeded from the very beginning. Timber owners and farmers were glad to give up the tedious flat boat shipping of lumber via the Patoka River route to markets along the Ohio and Mississippi as far as New Orleans. The overland return trip from these markets was long and hazardous, and the mules and merchandise taken in trade for both boats and lumber seldom showed a real profit for a season's labor.

That is how it all started! Hundreds of other American business communities began just as naturally, many with even greater resources and opportunity. But what is most remarkable about this prosaic beginning of a normal business venture is the course of events which followed. The Jasper Furniture Co., since 1920 the Jasper Desk Co., became the "seed" which not only germinated and grew but also developed many shoots or "plants". These plants also flourished over the years producing bountiful harvests in products, payrolls, profits and a continuing prosperity without a single "crop" failure to date. What is most noteworthy is that in 1956 the own-

Continued on Page 38

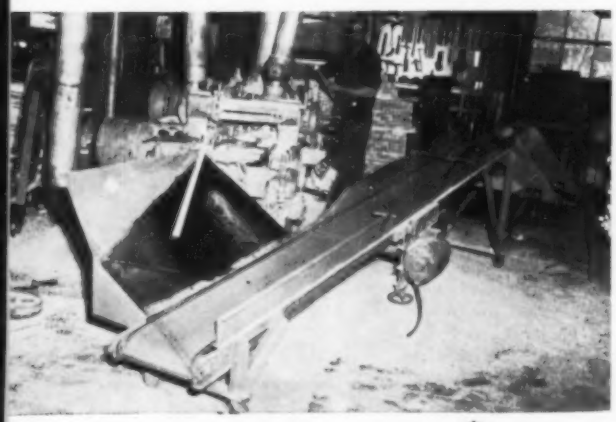
LUMBER LIFT moves lumber stacks from storage area on one floor level to machine room on second floor level



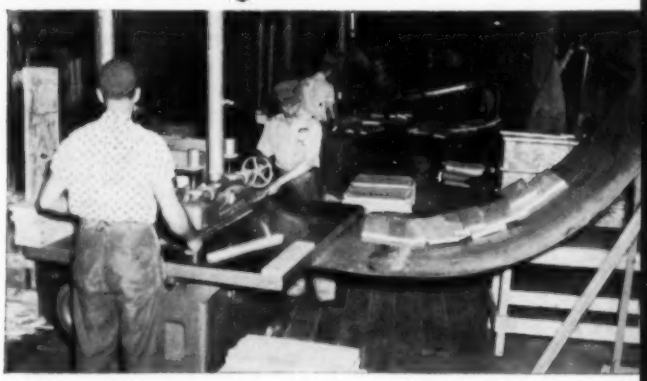
LUMBER ENTERS Jasper Cabinet Co. rough mill on lumber lift (foreground), is then moved to one of two infeed tables on either side and thence to cutoff saw. Tailboys carry acceptable stock to conveyor which moves stock to busting saw operator (background). Conveyor below tailboys catches all blocks 8 in. or shorter, moves them to inclined conveyor, which, in turn, carries them to boiler room. Note electric boxes above tailboy which control complete system

CLOSE-UP OF BUSTING saw with automatic tailboy arrangement. Operator removes curved or warped stock from conveyors, feeds it to busting saw. Inclined tailboy returns stock to conveyor. Operator can remove piece from conveyor for feeding to busting saw again, or allow it to proceed to planer

SIMILAR INSTALLATION at Jasper Cabinet Co. seen from opposite end. Ripsaws are set at 15° angle with curved slide racks which move stock from sorting conveyor to ripsaw



AUTOMATIC RETURN unit is portable and adjustable—frees offbearer at moulder or sticker for work elsewhere



(RIGHT) COMBINATION SIDE loading and end loading lift (background) at Indiana Desk Co. lifts lumber to level of cutoff saws equipped with disappearing ledges and gauge bar arrangements which deposit cutoff material onto a cross feed conveyor. Said conveyor then carries stock to next room (left) to outfeed end of flat top cross conveyor, dumps the lumber onto conveyor feeder. This conveyor has a transition section break and roller, and busting saw arrangement all in one piece

FIG. 1. MACHINING rough-sawn scarf surfaces of a curved laminated white oak member. The router is fixed to a flat, rigid wood block which rests on straight edges

Scarf Joints Prove Feasible for Large Laminated Members

Success of tests on large laminated white oak members points to a variety of special applications where such splices might be useful and economical

By FRED WERREN

Engineer, Forest Products Laboratory, Madison, Wis.

THE PROBLEM OF JOINING wood pieces end-to-end to obtain members of required length has long been with the wood fabricating industry, and has been emphasized by the advent of laminated construction. Various means have been utilized, and many methods proposed. The primary means of end-joining individual laminations for the production of large laminated members has been the plain glued scarf joint, which, when properly made, is an effective method of end-joining the laminations.

Tests made at the U. S. Forest Products Laboratory, in cooperation with the Bureau of Ships, Department of the Navy, show that large laminated members can also be spliced effectively with a plain glued scarf joint.

Many of the traditional building practices involving the structural use of wood have been changed with the introduction and rapid growth of the laminating industry. Continuity of strength is achieved by gluing members to the desired curvature or form rather than by connecting a series of members by mechanical methods. The development of extremely durable synthetic resin glues and new gluing techniques in recent years has broadened the fields of use of laminated wood products, and the use of preservative-treated laminated members has been initiated.

Higher design stresses have been assigned to laminated members than are permissible in many solid wood members of the same size. As a result of these and other factors, glued laminated wood members are finding increased use in a large variety of structural applications.

Theoretically, there is no limit to the size of a glued laminated member from the standpoint of fabrication and strength. Practically, however, the size is limited by problems of handling and shipping, since members may be of such size and shape that it is impossible to ship them by ordinary means, such as by truck or rail. This effectively precludes fabrication of the members at any point except at or very close to the erection site. If it were possible to fabricate the

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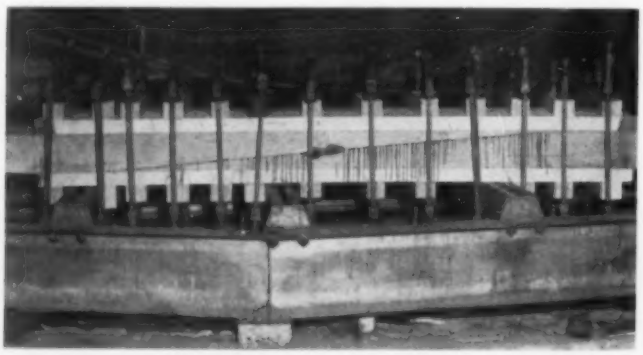

FIG. 2. VIEW of scarfed area of a curved member, with clamps tightened to obtain the desired glue-line pressure

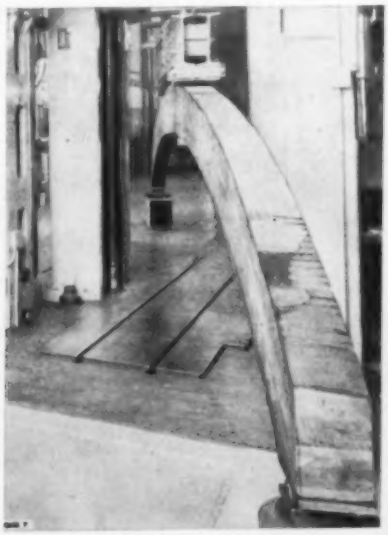

FIG. 3. TESTING spliced section of a laminated arch in static bending

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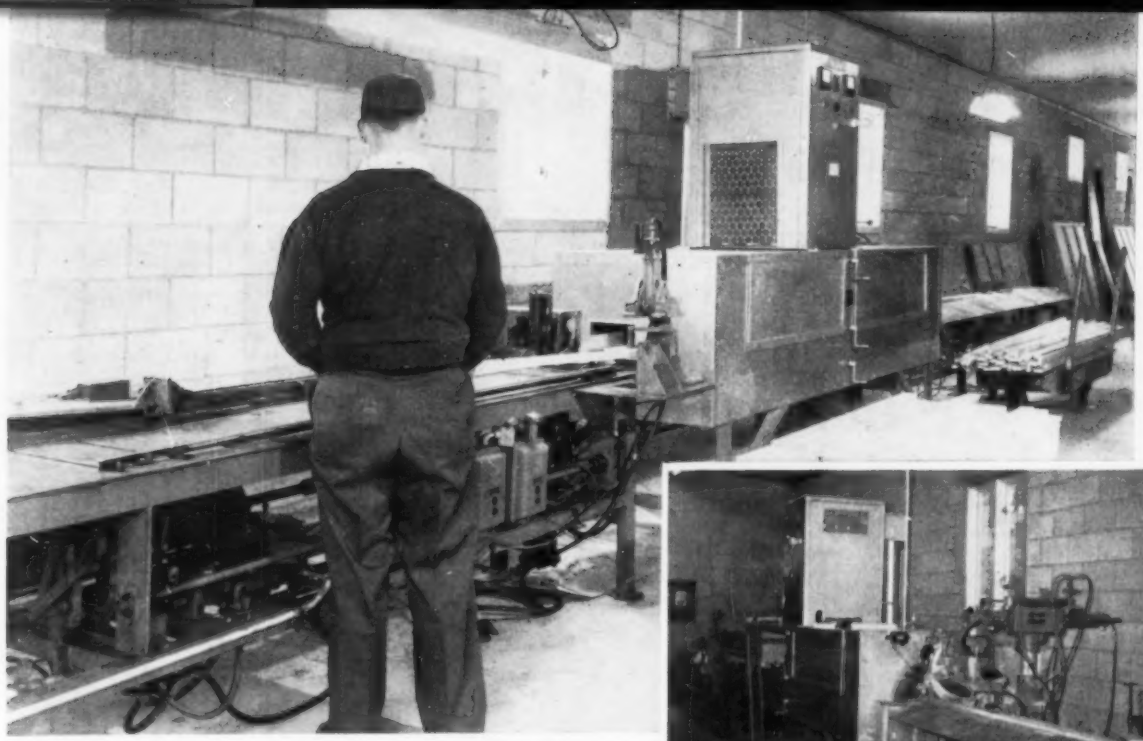
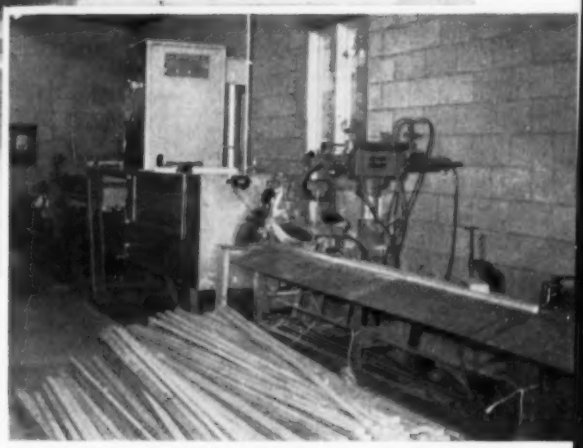


OPERATOR APPLIES GLUE to fingers of moulding stock before feeding it to automatic finger joint bonding line



STOCK EMERGES from press to pre-set length, air-operated cutoff saw moves forward, sizes piece, then automatic air-operated fingers push stock off line onto stack at side

Automatic Finger Joint Line Bonds Shorts Into Mouldings

High-frequency gluing, air-operated devices help Nashotah Moulding & Mfg. Co. ship carload lots with less than 5% of mouldings under 8 ft. long

AN AUTOMATIC FINGER JOINT bonding line enables the Nashotah Moulding & Mfg. Co., Nashotah, Wis., to utilize short, random lengths of clear stock of both Ponderosa pine and red oak in the production of quality mouldings.

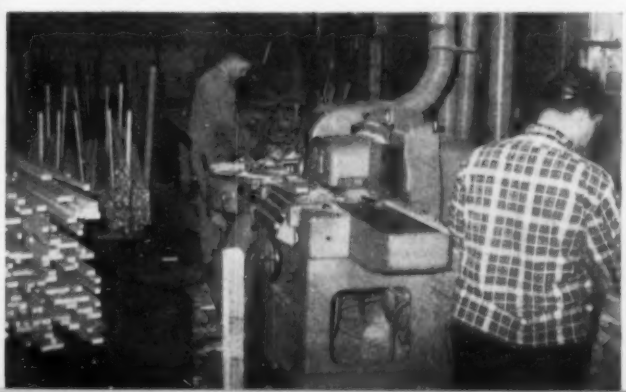
Moreover, the company is able to ship carload lots of mouldings with not more than 5% under 8 ft. long as compared with Western Pine Association rules which allow 15%. Breakage tests prove that once the finger joint is made, the wood breaks under stress before the glue joint does.

Finger jointing such as that prac-

Continued on Page 66

MACHINE cuts fingers in both ends of short, random lengths of Ponderosa pine and red oak which would otherwise be scrapped

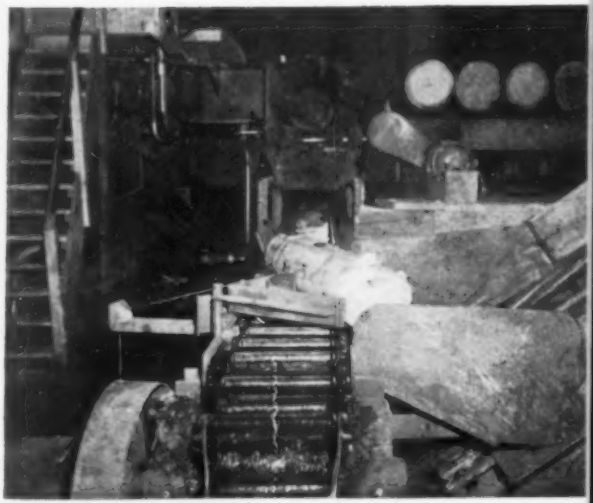
FINGER-JOINTED stock is processed through one of the company's moulders



1 LOADING 8 FT. LATHE: Giant arms lift log until light on each side spots chalked ring center. Mirror, seen here at left of log, helps operator

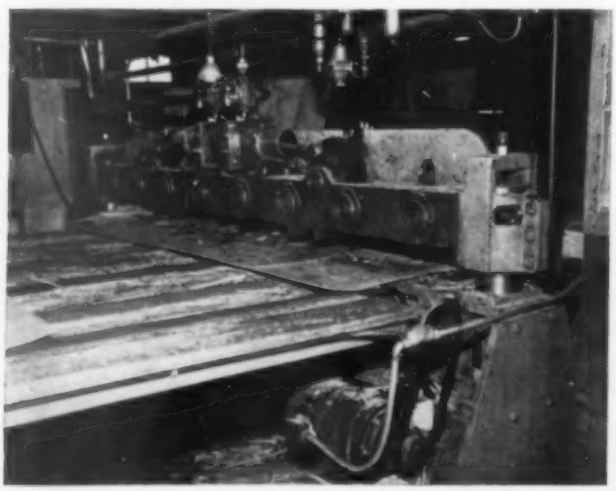
2 HYDRAULIC CONTROLS enable one man to prepare log for lathe. As soon as one log core is dropped, new log can be moved into place

3 CROSS-BAND VENEER is made of short, small-diameter logs on 4 ft. lathe. Charger simply lifts bolt into place, is run by lathe operator

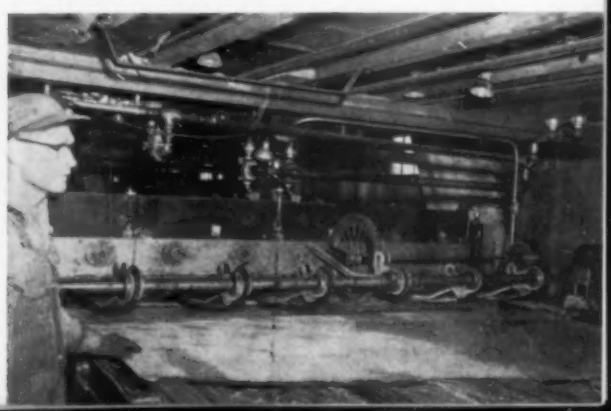


4 CONVEYOR "KICKER" enables waste cores from two lathes to boost themselves onto flight conveyor on way to waste bins

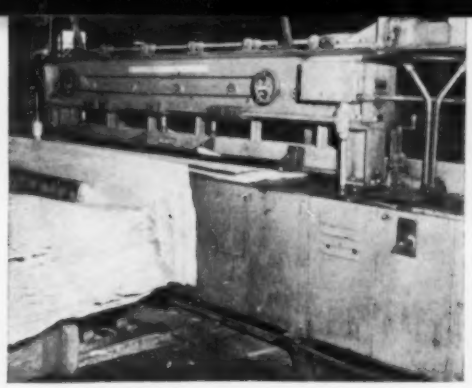
5 "DOWNSTREAM" SIDE of veneer clipper reveals circular "scissors" action of device, plus double-acting cylinder powering down-up stroke



6 "UPSTREAM" SIDE of veneer clipper shows width-measuring wheel of novel automatic clipper control device which aids operator



7 MOVING UPWARD under partially ejected panels are belt-powered arms of hot press unloader. These pull panels from press, pile them



8 APPLYING GLUE for electronic veneer edge gluer. Veneer bundle held vertically in front of machine is being jogged to square up edges

9 ECONOMICAL METHOD of making panel-size pieces of face veneer out of narrow strips by edge gluing, with electronic gluing machine

Why Diamond Lumber Co. is called . . .

"Hatching Ground for Production Ideas"

5 IMPROVED IDEAS WHICH BOOST THIS PLANT'S EFFICIENCY:

(1) Large lathe plus small lathe, and two new ways of chucking the log

(2) Clipping veneer automatically, with "scissors"

(3) Unloader which gives the pressman four arms and no burned hands

(4) A harnessed beam of light lowers cost of trimming panels

(5) Plus the latest ideas from the drawing boards of machinery makers

INCREASED WORKER EFFICIENCY, a wider range of standard production items, plus improved flexibility to meet market demand—these are the results of a series of improvements in production machinery which have been achieved at Diamond Lumber Co., Tillamook, Ore.

As a result, this fir plywood plant, comparatively young in the 50-year-old fir plywood industry, is often looked to for new ideas by other West Coast plywood production executives. A growing number of plywood plants are using Diamond ideas and at least one West Coast machinery manufacturer is producing equipment built under patents owned by the firm's engineers. The devices, for the most part, have been developed by E. W. Knokey, manager of the plant, and E. R. Knokey, superintendent of plywood production.

The plant is unique in its location, too. It occupies a giant wood-framed dirigible hanger at what formerly was the Tillamook Naval Air Station during World War II. The building is a huge round-topped structure providing some 11 acres under roof without an interfering post anywhere.

The plywood plant's entire production line, including two lathes, two veneer dryers, two hot plate presses, plus all panel finishing equipment and a sizable lumber green chain are housed in this unusual building. The plant thus provides "straight line production" without doubling back or causing the flow of veneer and panels to cross an X or a T.

TWO SIZES OF LATHE—The firm operates two lathes. One is of 8 ft. capacity, the other for 4 ft. bolts. The bigger lathe takes the big logs so de-

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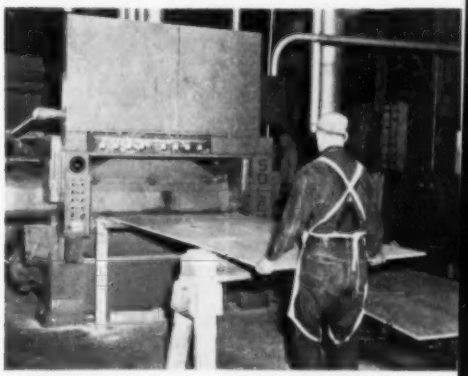
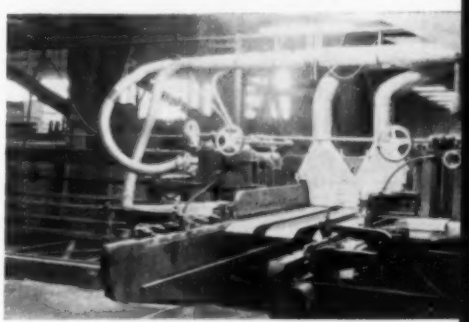
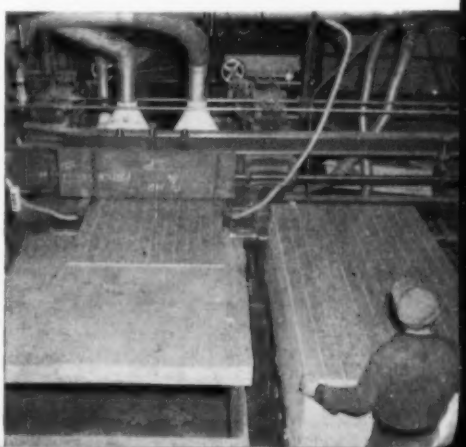


10 ONE OF TWO new 8-drum double-deck sanders which handle direct flow of mill's panel output



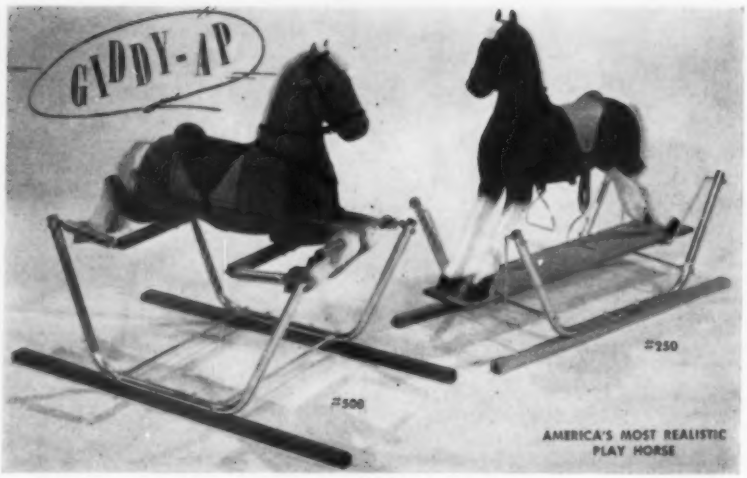
11 NEW PRODUCTS will be made on this multi-purpose machine (above and below) making use of potential 16 ft. opening to work simultaneously on both ends of long panels



LEGS are shaped from ¾ in. plywood

MOLD, filled with flour and resin mixture, is put under pressure by hydraulic press

MOLD is inserted in oven



HOBBY HORSES molded from 7 lb. of wood flour mixed with resin are finished in two colors—palomino and black

Mold Wood Waste Into Hobby Horses

DeLuxe Woodcraft Co. molds 35 to 40 tons of wood flour with resin annually into 10,000 colorful —and profitable—hobby horses with shaped plywood legs

A WOOD UTILIZATION PROJECT which is bringing delight to youngsters and profit to DeLuxe Woodcraft Co., Racine, Wis., is the molding of 35 to 40 tons of wood flour, mixed with resin, into some 10,000 hobby horses yearly. This production is accomplished with six workmen.

Approximately 7 lbs. of wood flour —usually pine of different grades, at the ratio of about 1/3 long fibers and 2/3 short fibers—is required for one horse.

Production begins when the wood flour is combined with the resin in a large mixer. The operator then inserts this mixture into the 100 lb. aluminum mold in three stages. First, he dusts the mold. Next, he puts in the first part of the mixture of flour and resin by piling it on a metal cover

Continued on Page 64

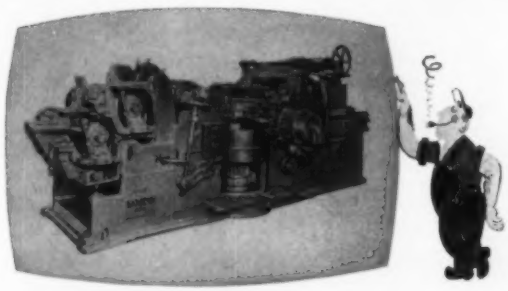
MOLD is removed from oven 18 minutes later

BODY of horse is sprayed with rayon flock for realistic finish

TAIL, mane, eyes, harness and saddle are attached

it's OK let 'er go!

and watch
OK THIN
PLANER KNIVES
deliver perfect finishes
on your toughest jobs



The S. A. Woods Machine Co., Boston, Mass., have a world wide reputation for building outstanding precision woodworking machines. Knives made by the Ohio Knife Co., installed on these machines, were selected because they are specially made to deliver exceptionally long runs without the necessity of re-grinding. Actual customer records show they consistently last 20% to 30% longer than competitive knives in the same service.

OK NO. 4 is a special type of high speed steel designed to withstand the heat of fast heavy feeds on rough, knotty and sandy lumber and still hold a keen edge on long runs.

OK NO. 6 is made of specially developed chrome steel for mills working in soft, green wood.

Next time order OK Planer Knives, and enjoy their superb performance, resulting in higher production at a lower cost. For complete information write Dept. 11-MM.

Manufacturers of Hog Knives, Veneer Knives, Chipper Knives, Planer Knives.

GO WITH OHIO GREEN

THE OHIO KNIFE CO.

CINCINNATI 23, OHIO

STRAIGHT LINE ripsaw being used to rip stock for panels

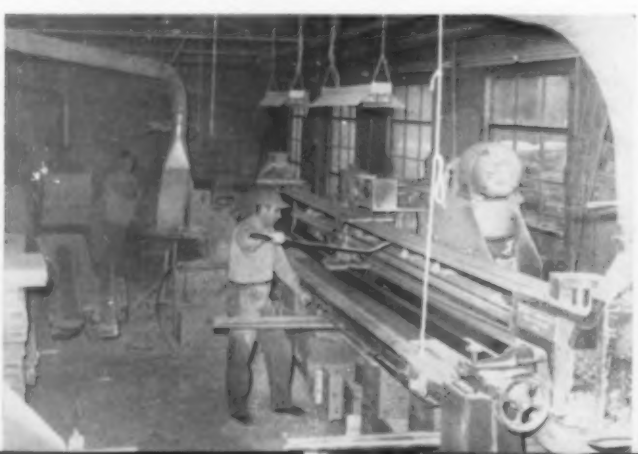
CORE STOCK moving over conveyorized glue applicator (right) and cross bands fed through glue applicator (left) converge on bed of hot press

NEW conveyorized cutoff saw

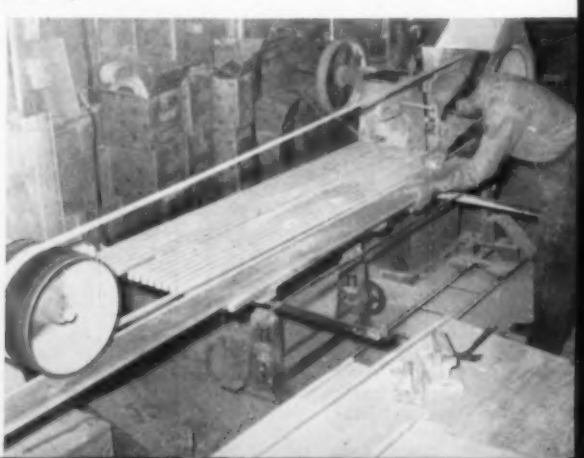
SHAPER fashions pew ends

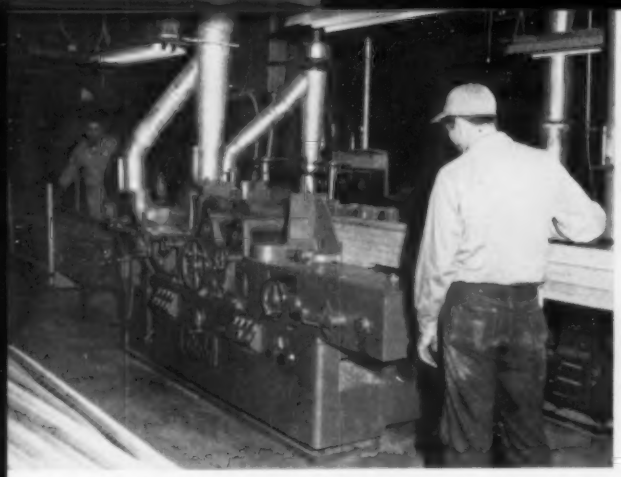
WORKMEN in cabinet room are assisted by battery of power tools

AUTOMATIC DOUBLE-BELT 18 ft. sander is placed with light at back for operator's convenience



SMALLER BELT sander being used for edge sanding



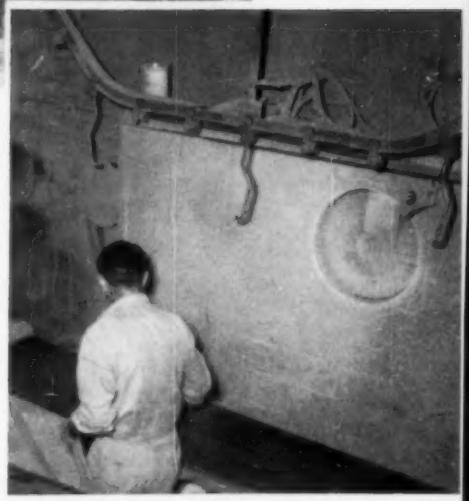


HOPPER-FED 8 in. moulder with air-lift feed roll cut production time from 15 to 1½ minutes

OVERHEAD conveyor speeds spraying 60%

New Machines, Methods Boost Church Furniture Output

Hopper-fed, air-lift feed roll moulder which cuts production time 90%, conveyorized hot spray system which speeds production 60% among techniques helping Endicott Church Furniture Co. keep up with demand



MOST PIECES are finished with hot lacquer

AN 8-IN. HOPPER-FED moulder equipped with an air-lift feed roll which has reduced the moulding operation from 15 to 1½ minutes and improved the quality of the work 100%, a two-belt automatic 18 ft. sander, a conveyorized hot press operation, a conveyorized hot spray finishing system which has speeded up production time 60% and cut the lacquer spraying operation 50%, conveyorized ripsaws and cutoff saws—all these plus continued plant expansion are the means by which Endicott Church Furniture Co., Warsaw, Ind., is keeping up with the demands for from three to five complete interiors for churches from Maine to California which the company is presently producing per week.

Present production entails processing 600,000 bd. ft. of lumber yearly, not counting veneers for pews. Over 2,000 lbs. of glue is used monthly. The plant has been expanded almost every year for the last decade — and each time it was thought that the area added would be adequate for years to come.

The Endicott Co. has been quick to take advantage of new woodworking production machines introduced. The company's 18 ft. belt sander was the first fully automatic one the producer built. It has two belts — one rough, and one finish. And to further save time in sanding, it was placed with the light to the back, so the operator can readily see when sanding is complete and move to the next piece. It is large enough to sand a whole pew lengthwise. The other belt sander is now used largely for edge sanding work.

Also in the sanding room may be found a serrated belt sander on which three men edge at the same time. (See

Continued on Page 70

THREE MEN edge at one time on serrated belt sander

(LEFT) FOAM rubber for upholstering pews is cut in strips. (Right) Strips are laid on boards, air powered hold-down units hold board against rubber while upholstering is tacked around assembly to back of board

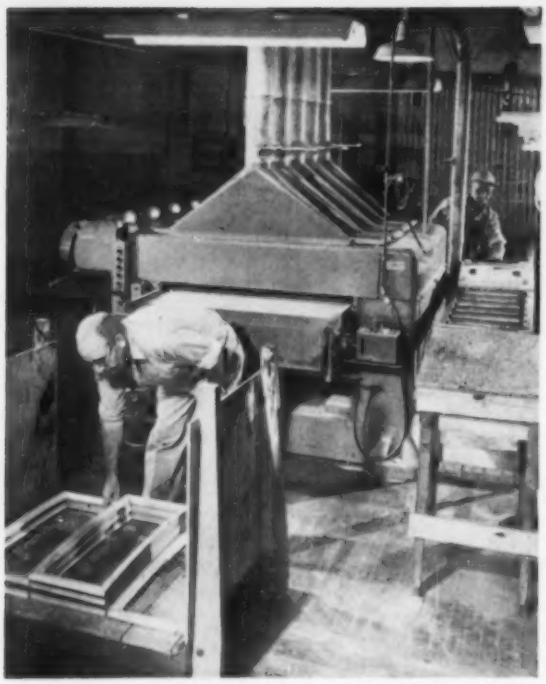


Photo Courtesy Salem Machine Co.

FOUR-DRUM endless-bed sander operating in plant of Steger Furniture Co., Steger, Ill.

How Forms Speed Special Woodworking Jobs

Made usually of laminated 4/4 boards bandsawed to required form, they provide faithful conformity and smooth edges to irregularly shaped stock

MANY DIFFERENT FORMS are employed in various woodworking operations. Some are relativelv light; others very heavy. Forms used in different press-gluing operations are generally solid and heavy. Almost any type of heavy wood form required may be made by laminating a considerable number of 4/4 boards, gluing them up preliminarily in a veneer press. Enough plies (often of low-grade white pine) are employed to provide required thickness. The resulting heavy block is then marked and bandsawed to required form.

In some instances, forms with a given outer contour are so made that glue-spread veneers may be *clamped* to them in multiple, to provide formed plywood members. In other instances, male and female forms have been worked out, then used to press glue-spread veneers in multiples between them. Circular head jambs have been glued up in this way; pressing glue-spread laminations between male and female forms in a veneer press.

Where forms are made for a specific type of work regarded as standard, which will repeat continually, much more care goes into their making. For a detail job, where forms must be scrapped after a given job is finished, it is not consistent to use too much care in making them.

Outline forms are much used in connection with wood shapers, both hand-feed and power-feed. Here, the workpiece is laid on top of the form, and the edge of the form (usually of hardwood or plywood) bears against the shaper collar while the cut is being made. In this way the outline of the workpiece is brought into faithful conformitv with the outline of the form, and the edge smoothed in the same operation.

Outline forms are employed to considerable extent in connection with portable routers. In this case, edges of the form serve to guide the router (and therefore the router bit) in a given pre-determined path, to accomplish a desired result.

Different woodworking machines, including moulders, ripsaws and planers, are dimensioning machines in the sense that they reduce all material put through them to a given width or thickness. Such machines are often not suited to operations on workpieces unless uniform thickness and parallelism (or uniform *width* and parallelism, as the case may be) are involved. Nevertheless, by using forms at these machines, they can be made suitable for machining tapers.

Also, where workpieces have one flat surface or one straight edge, the remaining surface or edge being bowed or irregularly shaped, a special form may be employed to receive the bowed or shaped edge or side of the workpiece, in such manner as to compensate and allow the remaining straight surface to be machined. One interesting instance of this type can be seen in the illustration, where a 4-drum endless bed sander is seen sanding flat sides of frames which are flat on one side and convex on the other.

The convex side of the frame is turned down on a form specially designed to receive it. By passing the form and frame through the machine together, the flat surface is sanded to high advantage. In this particular case, a very interesting provision has been made for ease in returning the forms from the machine offbearer to the infeed end. A section of gravity-roller conveyor is set up alongside the machine. All the offbearer has to do is place the forms on this section of conveyor at his end of the machine, whereupon they automatically return to a receiving work table at the infeed end of the machine.

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A Diehl machine you'll find in nearly every major production plant is the No. 750 Straight-Line Rip Saw. It is unsurpassed for high-speed, *tough* sawing and for precision accuracy in cutting straight-line glue joints. Its outstanding features make it *the standard of comparison in heavy-duty rip sawing.*

Features include heavily ribbed welded-steel base, heavy-duty pressure bar arms, completely sealed pressure roll bearings, solenoid lubrication to chain and race, and easy removal of sawdust.

The No. 750 is available in right or left hand models, and offers speeds up to 250 fpm and handles stock from ⅛″ to 4¼″ thick and as short as 7″. Table width is 25″ to right of blade and 37″ to the left.

This is only one example of the complete line of woodworking equipment offered by Diehl. Other machines include the Nos. 99, 990 and 909 Multi-Rip Saws, No. 725 Automatic Cut-Off Saw, No. 890 Tapeless Veneer Splicer, No. 69 Veneer Jointer and Edge Gluer, No. 660 Lumber Jointer and Edge Moulder and 4″-6″-8″ and 12″ Moulders.

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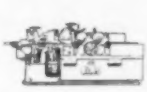
Standard of comparison in the woodworking industry...

No. 750 Straight-Line Rip Saw



4″—6″—8″—12″ Moulders

No. 99 Multi-Rip Saw

No. 890 Tapeless Veneer Splicer

No. 69 Veneer Jointer and Edge Gluer

Diehl

NOISE FROM PLANER due to action of planer on wood, was reduced 5 d.b. by sharpening cutting edges

9 Ways to Control Noise in Woodworking

If good maintenance procedures are followed, noise control depends solely upon the amount of energy, initiative and money devoted to it

By JAMES W. LAKE

Industrial Hygiene Engineer
Michigan Mutual Liability Co.

WHAT IS NOISE? This is a question which has been asked through the ages and undoubtedly will continue to be asked and discussed as long as there are people inhabiting the universe. After a great deal of thought by persons in the acoustics field on standards, the definition that "noise is unwanted sound" has been established.

For practical purposes let us assume that the sound of some woodworking machinery is noise. Specific noise sources, with typical over-all noise levels broken down, are illustrated in the accompanying table.

Interest in noise control has increased tremendously in the past few years for a number of reasons, mainly: (1) Excessive noise damages hearing of susceptible people; (2) Excessive noise encroaches on the privacy of the offending plant's neighbors; (3) A quieter machine sells better than a noisy machine, other things being equal.

Before an engineering approach can be made to noise control, the primary source of the noise must be defined. This is usually done by measuring the over-all level at a specified distance from the source; then the noise level is usually broken down into frequency components and the level of each frequency component is measured to get a picture of what is occurring. A graph may be prepared, plotting level vs. frequency.

ACOUSTICAL treatment at feed-out end of sticker can reduce noise

It will indicate the frequency bands where the noise reduction should be made and how much noise reduction is desired. Recently we made a study on a 30 in. planer surfacing red oak. Two frequency analyses were made—one defining the noise of the planer running empty, and the other defining the noise of the red oak being fed through. The noise from the planer running empty was due to the cutting surfaces, rotating at high speed, forcing air through the ventilation slot.

Closing the blast gate in the ventilation duct lowered the over-all level to 90 decibels. Of course, this defeated the purpose of the ventilation system, but did indicate that by redesign of the capture slot and the angle of the ventilation take-off a substantial noise reduction could be accomplished. It also eliminated the pure tone effect. The noise from the planer with red oak feed was due to the action of the planer on the wood. The over-all noise level was reduced 5 d.b. by merely

Continued on Page 82

MACHINE & OPERATION	Over-all Level d.b.	Octave (Frequency Band) Levels d.b. 37.5 – 75	75 – 150	150 – 300	300 – 600	600 – 1200	1200 – 2400	2400 – 4800	4800 – 9600
Wood Planer ⅜" Cut on 12" x 16" Pine	108	80	77	102	94	100	105	98	93
Circular Cutoff Saw, End Cut on 6" x 12" x 1" Beech	106	83	80	82	88	89	87	104	102
Drum Barker, Tumbling of 2' x 6" Diameter Log Pieces	98	92	91	93	88	89	78	74	77
Drum Sander 36" on Pine Millwork									
Finishing Planer, 30" on Pine Windows	92	84	87	83	86	81	77	70	66
Shaper, Pine Millwork	96	82	87	89	92	86	86	86	72
Sticker Molder, Shaping Furniture Parts	101	85	89	88	91	96	97	92	84
Molder, Maple Furniture	101	76	83	88	97	96	94	92	85
Planer, 30" 4' x 8" x 2" Oak Pieces	100	82	86	96	95	95	84	84	74

FIG. 1. Typical Noise Levels. However, they are only typical, and may vary from the level of similar machinery by several decibels depending on the condition of the equipment, the kind of wood being worked, the make of the equipment, sound control measures, etc.

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What counts most when a new veneer plant is being laid out? *Experience*, of course. Good machinery in the wrong place will keep profits down. Our first aim is to build good machinery — in fact, the best we possibly can.

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Next time the Coe sales engineer visits your plant why don't you outline your problem to him. He will give you the benefit of his personal experience and in addition, if needed, call upon the factory engineering staff for their suggestions, too. If a new plant is involved, past studies are available for reference to guide your planning. Often a review of the past saves valuable time in the future.

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VENEER MACHINERY SINCE 1852

NEW OFFICERS and regional board members of Forest Products Research society elected at the 10th annual board meeting at Asheville, N. C. were (bottom row, left to right) Southwest, Raymond H. Berry, Scott Lumber Co., Inc., Burney, Calif.; President-elect Frank H. Kaufert, University of Minnesota, St. Paul; President Ralph H. Bescher, Koppers Co., Inc., Pittsburgh, Pa.; Retiring President Moss B. Christian, Chicago Mill & Lumber Co., Tallulah, La.; (top row, left to right) South Central, W. R. Warner, Southern Lumber Co., Warren, Ark.; Southeast, W. L. Irwin, Poinsett Lumber and Mfg. Co., Pickens, S. C.; Northwest, J. D. Ritchie, Douglas Fir Plywood Assn., Tacoma, Wash.; Northeast, Charles R. Lockard, Forest Utilization Service, Northeast Station, Upper Darby, Pa. (appointed by the Board to succeed Frank Parrish who resigned); North Central, Robert L. Hiller, American Cyanamid Co., Hartland, Wis. W. Jeter Eason, Nickey Bros., Inc., Memphis, Tenn., elected vice-president, was not present when picture was taken

Chipboard from Wood Waste Main Interest at F.P.R.S. Meeting

50 papers on all phases of wood processing presented at 14 different technical sessions —Bescher elected president—Attendance exceeds 800

USE OF FOREST PRODUCTS waste — particularly in wood base composition board—highlighted the 10th annual meeting of the Forest Products Research Society at Asheville, N. C., June 4-7, 1956.

Over 800 registered for the meeting which featured some 50 papers in 14 technical sessions on such topics as Quality Control, Wood Preservation, Logging and Milling, Wood Drying, Wood Machining, Glues and Gluing, Chemical Utilization, and Marketing.

A suppliers exhibit by more than 80 wood industry suppliers was held in the city auditorium in conjunction with the meeting.

Moss B. Christian, Chicago Mill and Lumber Co., Tallulah, Miss., presided at the meetings, turning the gavel over at the official luncheon to Ralph H. Bescher, Koppers Co., Pittsburgh, Pa., the new president. Dr. Frank H. Kaufert, director, School of Forestry, University of Minnesota, St. Paul, is president elect and W. Peter Eason, Poinsett Lumber & Mfg. Co., Memphis, Tenn., was elected vice-president. The Society's 1957 meeting will be held at Buffalo, N. Y.

Wood waste material which in the past made only fuel for the boiler is finding its way into various merchantable products, said E. P. Ivory, and pointed out that his firm, Ivory Pine Co., Dinuba, Calif., developed a way to reduce sawmill waste from around 300 tons per day — all burned in a burner — to approximately 30 tons per day. He spoke of almost 100% utilization within the next five years.

"One fraction after another has been prepared and placed on the market," said Mr. Ivory. "Among them have been shavings, sawdust, wood flour, raw pulverized bark, composted bark dust, car strips and wood chips."

Use of composition boards and other wood-base materials in mass home building was discussed by W. J. Worth, National Homes Corp., Lafayette, Ind. He covered the general physical properties desirable, specific properties important to prefabrication, and the use of wood products as finish materials. He discussed use of such wood products in housing, schools and commercial buildings, pointed out the influence of building codes and insurance rates, and discussed the outlook for future uses of wood in mass building.

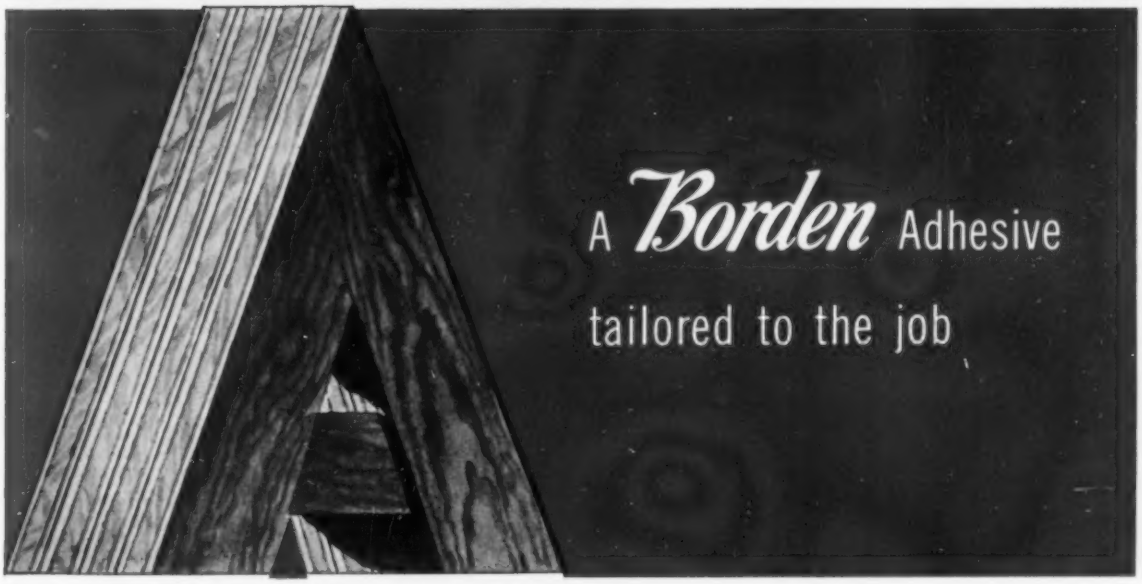
"Wood aggregate materials have found a definite place in the wood working industry," said R. H. Yale, Poinsett Lumber & Mfg. Co., Pickens, S. C., "but consumer acceptance is dependent upon how much is expected of the product and what claims are made for it."

Wood composition board should not be considered a substitute for wood, but as a by-product, he added, and thereby equally effective as solid lumber.

At the session on wood finishing, D. G. Lubeck, Hammond Organ Co., Chicago, declared, "The discoloration of furniture finishes involves a pattern of predictable behaviors that can be prevented or controlled by a proper selection of materials and an understanding of the processes of discoloration."

R. T. White, Brunswicke-Balke-Collender Co., Marion, Va., in a paper prepared in conjunction with L. O. Reed of the same company, stated their firm has been using statistical sampling for more than two years in the receiving inspection of veneer.

"This form of sampling when used in conjunction with other fundamental practices associated with good inspection, has proved to be very successful in maintaining quality at a minimum cost," he declared. "Statistical sampling removes the guesswork often allied with spot checking and cuts costs



Borden's adhesive specialists have to consider a variety of factors before they can recommend the right glue for each gluing job. Particularly when the *durability* of the glue is an important question.

For example: Will the end product be exposed to heat? Cold? High humidity? Extreme weather conditions? How durable is the product to be? What kind or kinds of woods are to be used? Fir? Gum? Poplar?

These questions and many more are asked by Borden because no one glue or type of glue is durable enough for every job. Therefore, to meet your specifications with the *right* glue, Borden specialists apply 35 years of experience and experimentation with adhesives to your needs. These experts analyze your requirements, and then—by utilizing Borden's wide range of catalysts and modifiers—come up with the best glue for your requirements.

If you would like to receive informative data on this subject of "durability," write for Service Bulletin No. 72a, "Durability of Woodworking Adhesives", which sets forth the results of long term durability tests on plywood aged 10-16 years bonded with synthetic resins. The Borden Company, Chemical Division, Dept. WWP-76, 350 Madison Ave., New York 17, N. Y.

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by virtually eliminating 100% inspection."

In his paper "Development of an Automatic Sawmill Carriage Feed" M. H. Mater, Mater Engineering, Corvallis, Ore., outlined the initial phase of a three-part research and development program undertaken to develop an automatic system of controlling the sawing speed.

He reported on the effect of knots on various possible indicators, and the effect of the upper saw guide position in relation to the resultant dimensional stability. He concluded by stating that a curve of amperage requirements vs. time was finally developed which will be used to develop the sawing speed control device which will be tested in Phase II of the program.

In the Glues and Gluing sessions, M. J. Rhude, Unit Structures, Inc., Peshtigo, Wis. stated that the real secret of success of the quality control department lies in defect prevention, by feeding information back into the production department as soon as possible so that faulty production may be stopped.

He stated that quality control functions in the following categories of laminated timber fabrication: (1) Surveillance of quality throughout all phases of fabrication, from receipt of materials to shipment to the finished member; (2) Sampling of the product for testing and acceptance or rejection; (3) Assistance in establishment of proper production procedures and training of production personnel in quality practices: (4) Liaison between production and engineering departments; and (5) Analysis of service reports and action as trouble-shooting service.

Reuben B. Robertson, Sr., president and chairman of the board of the Champion Paper and Fiber Co., Canton, N. C., delivered the principal address at the official luncheon which was followed by the annual presentation of WOOD awards for outstanding research in the wood field. (See page 7.)

Social activities included a 130-mile bus tour of the Great Smoky mountains culminating in the traditional "Paul Bunyan Barbeque on Heintooga Bald Overlook, and the annual banquet.

The final two days of the week were devoted to visits by convention delegates to 10 forest products companies' plants in western North and South Carolina. These included Williams-Brownell, Inc., Asheville; Broyhill Furniture Factories, Lenoir, N. C.; Drexel Furniture Co., Drexel, N. C.; Morgan Mfg. Co., Black Mountain, N. C.; Champion Paper and Fibre Co., Canton, N. C.; Ecusta Paper Corp., Pisgah Forest, N. C.; Draper Corp., Swannanoa, N. C.; American Enka Corp., Enka, N. C.; Taylor-Colquitt Co., Spartanburg, S. C.; and Poinsett Lumber and Mfg. Co., Pickens, S. C.

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Specifications: Takes W-T ¾" bore cutters, or ½" and ⅝" bore with adapters furnished . . . Spindle travels 3" on dovetailed ways; gibbed for adjustment and to take up any wear . . . Table is 22" x 33", with milled ¾" slot for miter gauge . . . Available with 1 hp single-phase or 1½ hp 3-phase motor, with big overload capacity . . . Cutter is completely guarded.

The rugged spindle is mounted on dust-sealed ball bearings 10" apart — this eliminates spindle whip. Spindle has two speeds: 7,000 and 11,000 rpm, giving you the correct speeds for different sized cutters.

Ask your W-T Distributor to *demonstrate*. He's listed under "Tools" in your phone book's Yellow Pages. Or write for his name and full specifications.

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This material has been fully proved through practical application by some of the countries largest manufacturers in the furniture, woodworking and plastic fabricating fields.

Manufactured in the most modern of plants, Granite Board's entire production is electronically controlled.

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Jasper Story
Continued from Page 20

ers and managers of Jasper's woodworking companies are third and fourth generation members of the original families.

Today at least a quarter of all the wood office furniture sold to and used by American business is made at Jasper, Ind. From a one shop beginning with less than 10 workers in 1876, there are now 17 major companies associated with woodworking, all independently operated, with a total of more than 2000 employees and a payroll of close to a million per month.

Most of the early settlers who founded Jasper were of German descent. They came from Pennsylvania and from Germany. To a man they brought with them not only skills and experience in woodworking, but also an enduring love of perfection in whatever their hands wrought. This pride of workmanship is an accepted Jasper tradition which applies just as much today as it did when John Gramelspacher turned out the first hand tooled desks, many years ago.

To make business desks, school desks, chairs, tables, cabinets, filing equipment, secretaries, breakfronts and kneehole desks, veneer and plywood for furniture, musical instruments, aviation and automobile accessories — all of wood — requires heads-up use of men, machinery and materials. Also to compete successfully in a steel age it takes brains, fortitude, ideas and salesmanship. These things are all in the Jasper day.

Good times have come and gone and still Jasper's industries have kept right on expanding, revising, refining and producing. Not a single plant shut down nor was labor laid off during the darkest days of the depression. The same rate of unemployment average — .015 — which occurred during the worst of the '30s still is normal in 1956. And while warehouses bulged with finished inventories, not one payroll was missed even though workers were often shuttled from plant to plant to keep everyone busy. So far as the record shows not one Jasper home owner suffered a mortgage foreclosure. It wasn't easy, but they did it without a bread line or a call for outside help. These are some of the reasons why the record of Jasper, Ind., may be considered a standard of American business achievement in competitive cooperation and community responsibility.

Times change. Men wear out. Machines wear out. A machine, like a man, has its peak of usefulness eventually to lose out in the tempo of modern production. Lighter jobs for mind and hand can be found for men; even retirement is a future haven — but how does one retire an old glue reel?

Jasper people don't go all out for a new idea or machine just because the blueprints seem to prove it's the thing to do or buy. There are always other important conditions to consider which may seem unimportant to a younger generation but none of Jasper's plants have ever really been old fashioned. Machinery and methods have kept up to what has been required to keep each company's output moving profitably to market. Styling has always been important. Workmanship has set standards for much of the industry at large. Dealers have cooperated to make a "Buy Jasper" slogan well known from coast to coast. Jasper has kept up as a front runner in all the furniture marts even though changes at home have been gradual.

Any company manager knows when THE DAY comes. It is the time when the directors, or the owner, or the committee, in meeting the challenge of higher costs of materials and labor, has to decide (1) whether to raise prices, (2) cut down on quality, or (3) by-pass either decision by making major improvements in the entire plant set-up as quickly and as

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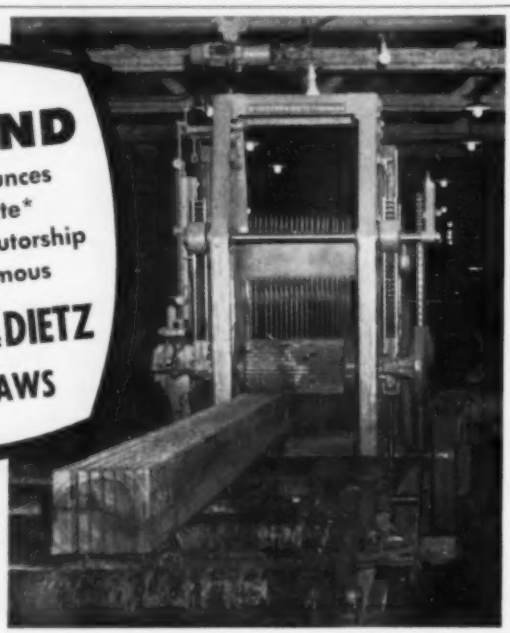
proudly announces their 26 State* exclusive distributorship for world-famous
WURSTER & DIETZ GANG SAWS



Typical American installation of gang saw by Wurster & Dietz, a German firm famous for fine sawmill equipment since 1867.

The modern way to save time and labor, cut rising lumber costs. Saw entire logs at one time. Smaller kerf. 96% of boards dead accurate. Up to 35% more overrun. Factory expert supervises erection.

BEFORE YOU BUY ANY GANG SAW, BE SURE TO CHECK THE ADVANTAGES OFFERED BY WURSTER & DIETZ GANG SAWS, DETAILED BULLETIN ON REQUEST.

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Catalin Resin 8666 is a chemically modified, liquid urea formaldehyde adhesive. It yields exceptionally durable, craze resistant, gap filling, moisture resistant bonds. Perfect for assembly and structural wood gluing . . . Resin 8666 is also an excellent adhesive for bonding decorative laminates to plywood, wood cores or hardboards such as "Masonite." Write for samples and technical data.

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smoothly as men and money can get a program under way. If done by experienced management, the new and the old are carefully integrated under the general heading of mechanization so that the best of each is available to every department.

At Jasper the program of renovation has been going on since the company caught its breath after World War II. It began with improvements in the handling and movement of raw materials in the rough mills, and moved into the assembly and finishing departments. Some of these installations may be described to advantage. Let's start with a simple change which saved space, labor and time with minimum expense:

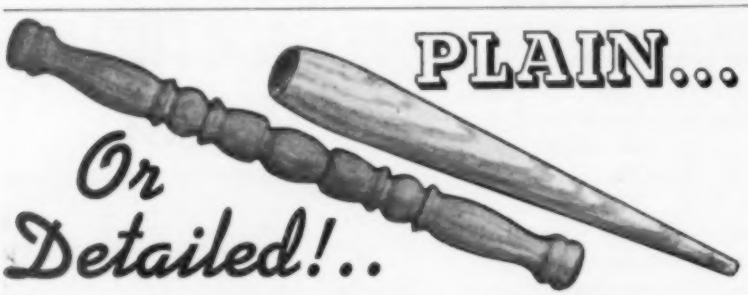
At the plant of the Indiana Desk Co., inbound shipping cartons are now unloaded by one man from trucks onto a 10 ft. conveyor set at truck body level. The conveyor moves them up and over 100 ft. of railroad siding to the third floor packing room. This not only saved the labor of three workers with hand trucks but freed valuable hall and elevator space for production work.

In the rough mill of the same plant important changes have been made in the past two years which in some instances have improved efficiency by almost 25%. Among these installations is a lumber lift which is a combination side and end loader, two cutoff saws equipped with disappearing ledges, and gauge bar arrangement whereby cutoff material is deposited onto a cross feeder conveyor. A scrap conveyor has also been built immediately under the cross conveyor to carry the cutoff blocks and scrap up overhead and into the boiler room. Part of this installation continues into an adjoining room where the flat top cross conveyor carries lumber over and drops it onto a planer feeder. This feeder is designed to contain a transition section break and roller and busting saw arrangement all in one piece. The busting saw is coordinated with an automatic ripsaw tailboy.

At the Jasper Turning Co. a floor-to-floor lumber elevator or lift 8 ft. wide by 18 ft. long by 14 ft. high has recently been installed. Electrically operated by a recessed power unit, it has dual controls and magnetic braking arrangements so it can be operated or controlled from either floor. It will lift maximum lumber loads up to 20 tons capacity from one floor level to the other. A cutoff saw and rough mill operate directly from this lift. Other improvements are planned for this rapidly expanding wood turning plant which finds its market right in Jasper.

Another piece of equipment which has a wide field in Jasper woodworking plants is an automatic moulder or sticker return unit with automatic stacker. Such a unit is used by the Jasper Desk Co. Because it is fully portable and the stacker is adjustable, an offbearer is seldom required. Similar portable equipment is being planned for other operations.

A perfect example of how mechanical handling of materials is successfully integrated with hand operated saws and the like is found at the plant of the Forest Products Co., operated by William Seng Sr. and William Seng Jr. Here two older hand operated cutoff saws are operated from infeed tables in a system with two cutoff saw tailboys. Again a scrap conveyor is below the cross feeder which automatically catches the block, 8 in. and shorter, and dumps it into a short inclined conveyor leading to a scrap box. Balance of the same system includes a planer feeder, and ripsaw tailboy. Completion of this system in the near future includes installation of an automatic edge jointer and sorter for three ripsaws. This closely coordinated series of operations is designed for production of first grade dimension stock, much of it American black walnut used in Jasper-made fine



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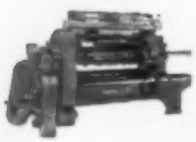

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Adalox Belts are favorites for cleaning up rough edges and glued areas.

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This combination of a wide BEHR-MANNING abrasive belt teamed with a Murdock Contact Sander makes it possible to turn out highly-polished chair back posts at record-breaking speeds. This is just one of the many up-to-date coated abrasive applications of today answering the Woodworking Industry's demand for increased production and finer finishes. Though your particular problem may be different, a Behr-Manning Field Engineer will gladly demonstrate a modern coated abrasive belt solution in your plant or at a nearby Behr-Manning Demonstration Room. Call him today, or write Behr-Manning Co., Troy, N. Y., Dept. WP-7.

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furniture, case goods and desks.

Forest Products Co. specializes in full dimension fancy woods, so to speak, and does not make finished furniture. In this connection the Sengs are working on a plan which should hit a national all-time high in their particular field of wood handling and preparation. More of this will be discussed later but when fully completed and in operation it is estimated that elapsed time from cut log to shipping invoice will require not more than ten days. Total distance traveled by the stock will be less than 500 ft. from yard to truck.

"We believe that our investment in mechanical improvements in our plants is the only way we can keep production costs down, selling prices at competitive levels, and employment high. So far as I know a better method or a better machine has never cost one of our workers a job. On the contrary, the efficiencies obtained have meant more jobs at other points" says William Fritch, President, Jasper Cabinet Co. and Jasper Turning Co. and a Jasper veteran who generally lets his deeds speak for him. One of his deeds which does speak loudly is the recent completion of the first unit of a modernization program which will take some planning and doing.

This first unit is at the Jasper Cabinet Co., plant. It is a rough mill division installation which is not only saving money, labor, and material, but is also taking a piece of kiln dried lumber from the lift to the finish mill in average time of 60 seconds. This calls for split-second timing but it is being done. The new material handling setup which consists of two cutoff saws, one planer, one edge jointer, three ripsaws—a complete rough mill occupies the same space formerly occupied by only the two cutoff saws.

Specifically, the new system comprises a cable-type lumber lift, two cutoff saw infeed tables, cutoff saw tailboys, scrap conveyor to carry blocks to adjoining boiler room on other side of wall, planer feeder with busting saw and automatic ripsaw tailboy, ripsaw sorting conveyor, edge jointer infeeder and continuous conveyor belts which take every advantage of gravity to keep the stream of material moving.

The same principle of equipment investment to make money was applied at the plant of the Jasper Novelty Furniture Co. and Louis Eckstein, president and banker, still speaks fondly of the $20,000 investment in double and tenoner equipment which paid off so handsomely.

What is true of the installation described is equally true of all of the other Jasper plants. At the Jasper Seating Co., for instance, efficient handling starts with a palletized yard and carries on through many departments. At the Indiana Chair Co. plant, a Ford-like assembly line has been designed for chair assembly which is working wonders with more improvements to come. In plants such as that of the Jasper Wood Products Co. where plywood wizardry is performed under the direction of the Clarence Gramelspacher organization, other principles are applied which are fully in the Jasper tradition but of a different nature.

To an outsider there is one rather strange feature about the Jasper system which acts as a frame around the whole industrial picture. This is the seeming carelessness with which each corporation regards what would normally be important secrets in any other community. There is no secrecy and no attempt to hide cost-cutting methods. What is good for one apparently is free to all if usable. Maybe this is why Jasper enterprises succeed. Maybe this is a golden rule which helps in this decade. At any rate it has worked and is working at Jasper.

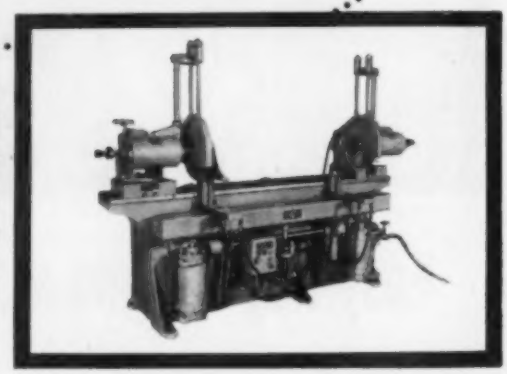
Some Machinery and Equipment Used at Jasper Plants:

Cutoff Saws	G. M. Diehl Machine Works
Conveyors, Lumber lifts	Walters Mfg. Co.
Planers	Oliver Machinery Co.
Electrical Controls	Allen Bradley Co.

the NEW BELL 112

PRECISION ENGINEERED

– double-end miter and cut-off saw for the woodworking industry and light metal fabrication



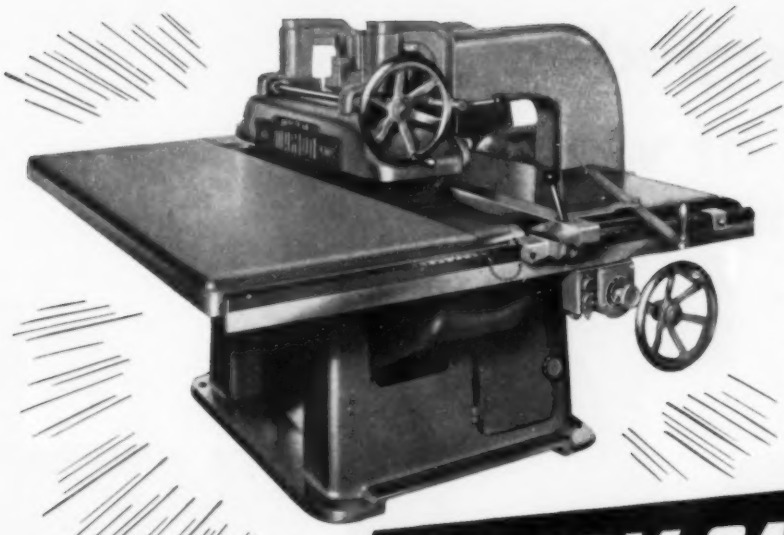
New versatility, new accuracies, new controls are now available for square end work, miters, notching, and dadoing . . . with the new Bell 112 Double End Miter and Cut-Off Saw.
It's an advancement of the Bell Double End Miter and Cut-off Saw used throughout the world in every conceivable type of woodworking plant. In addition to the features that have made this machine the "standard of the industry", the new 112 features include. . . .

- Adjustable pressure 8" air cylinders with an air cushion *in both ends* of the cylinder to provide smoother, more accurate, controlled cutting.
- A *complete* control panel, incorporating a master stop, set-up button, time delay adjustment to set dwell time, *automatic or manual cycling*, and individual head buttons, *ALL* located at the operator's finger tips and operating from a single 110 volt circuit.
- An air powered table with stroke accurately controlled by a micro switch and adjustable for any preset cutting.
- Visible air pressure gauges and regulators. Air valves, solonoids, and electrical panel safely enclosed within welded steel base.
- Air clamps for automatic holding of stock cycled by a micro-switch. (available as extra equipment)

These are but a few of the many new and additional features available in the Bell 112. Immediate delivery on standard units. For additional information, write

Bell
WOODWORKING MACHINERY

THE BELL MACHINE COMPANY
78 Jackson Dr., Oshkosh, Wisconsin



MODEL M
RIP SAW

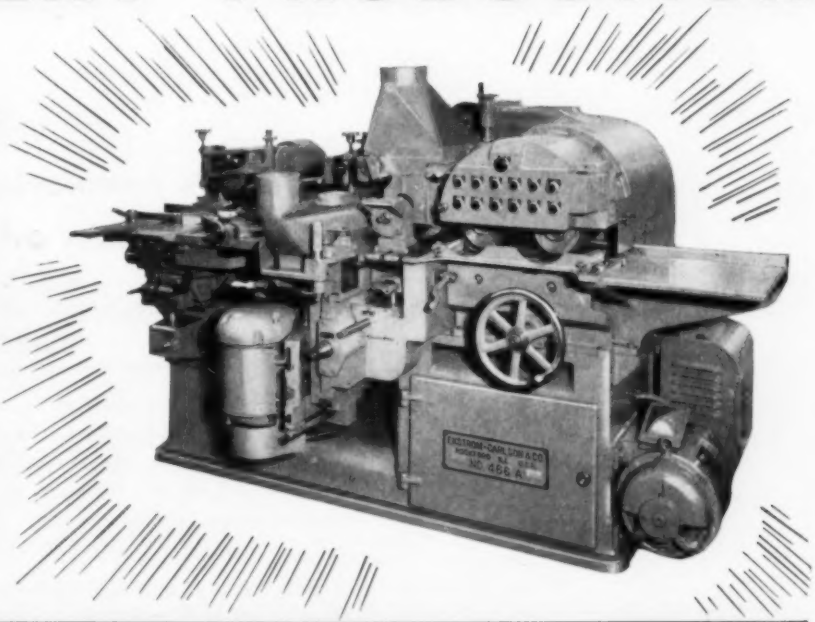
This fine machine is carefully designed and ruggedly built to do an outstanding job of undercut, straight-line, glue joint ripping. It has tremendous capacity, great accuracy, and a long and useful life. Formerly a product of Marion Machine Foundry and Supply Company, it is now a prominent and valuable addition to the Ekstrom-Carlson line.

EKSTROM, CARLSON

MODERN MACHINES FOR EFFICIENT PRODUCTION

HI-SPEED
MOULDER

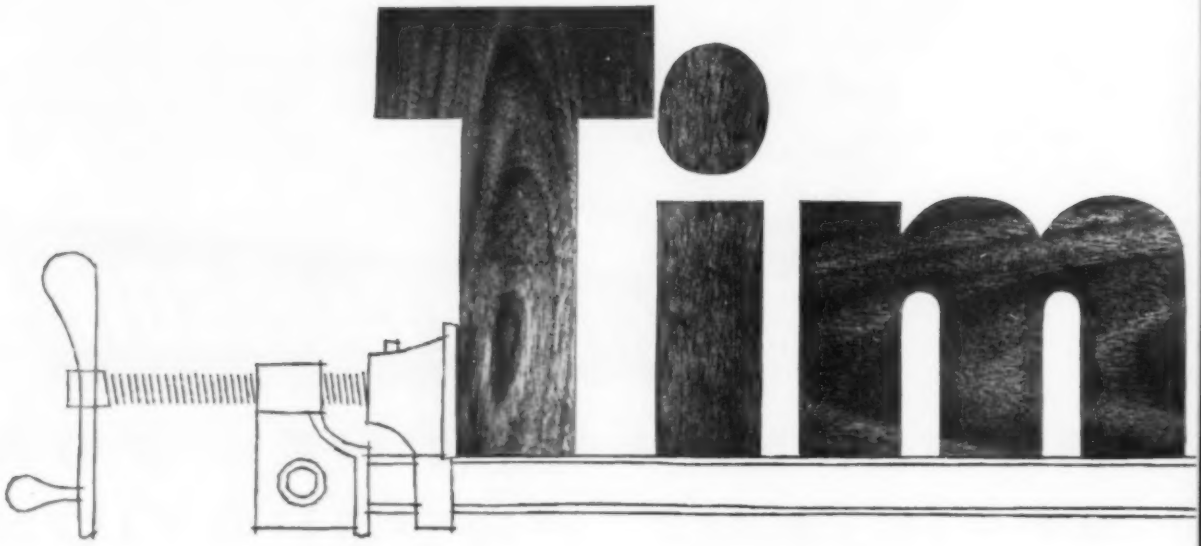
Here is an improved version of the widely-used Ekstrom-Carlson HI-SPEED Moulder, incorporating changes that add to convenience in operating, improved performance and accuracy, and greater production efficiency. Users of this moulder testify to its effectiveness because (1) Independent and preselected spindle speeds of 3600, 4800, 5400, 6000, or 7200 RPM without the use of a frequency converter. (2) Cutter heads can be jointed at high spindle speeds. (3) Infinitely variable feed rates from 25 to 225 feet per minute. Write for full information on this and all the other Ekstrom-Carlson production machine tools for the woodworking industry.



MOULDERS • SAWS • ROUTERS • SHAPERS • SANDERS • CARVERS
BORERS • GROOVERS • PANEL SIZERS • CORNER BLOCK MACHINES
ROUTER BITS • FORM CUTTERS • CUTTER HEADS

EKSTROM, CARLSON & CO., DEPT. W-3, 1400 Railroad Ave., Rockford, Illinois

Density-keyed to 40 kinds of wood!



Armour's revolutionary new line of polyvinyl resin adhesives

No longer do you have to guess which glue is right for the wood you use. Now Armour's new TIMBOND line of adhesives, *density-keyed to 40 kinds of wood*, solve that problem for you!

That's because TIMBOND adhesives are scientifically formulated in Armour research laboratories to vary in strength according to the densities of different species of wood. So you're assured of maximum adhesive performance for every kind of wood you use, and since a TIMBOND adhesive takes the place of several different types of glue—you save money!

This versatile new line of TIMBOND adhesives produce bonds of superior strength and shock resistances equal to or greater than the strength of most woods. They dry quickly, are odorless, mold-proof, vermin-proof, water-resistant, light-colored. No diluting or heating is necessary—they're supplied ready to use! Application can be made by roller, glue gun or brush.

Mail coupon and designate the wood or woods you use. Do it today and we will promptly send you product and ordering data on the TIMBOND adhesive density-keyed to your woods.

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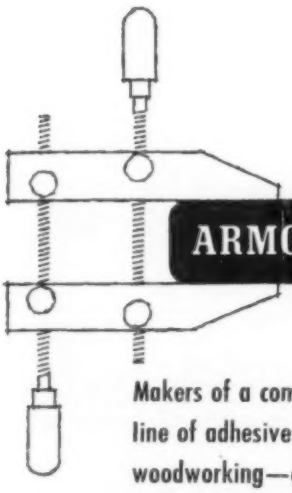

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Makers of a complete line of adhesives for woodworking—chrome glues, hide glues, liquid hide glues, polyvinyl resin emulsions

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I would like further information on TIMBOND.

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Name _____ *Title* _____

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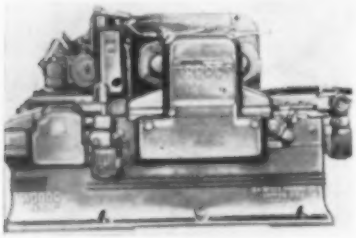
P7

NEW and IMPROVED PRODUCTS

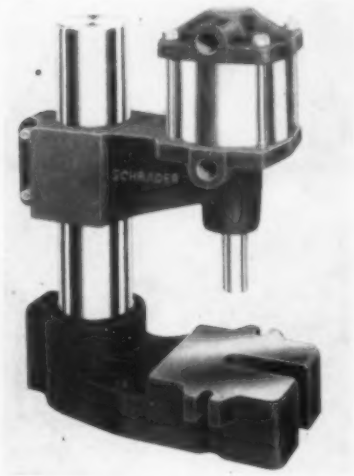


Blankers

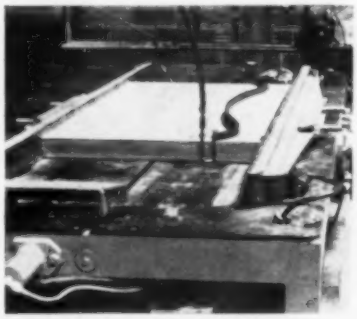
MFR: S. A. Woods Machine Co., Dept. WP, 27 Damrell St., Boston 27, Mass.
DESCRIPTION: New series of blankers the 469M (shown), and 461M and 463M for less required production.
FEATURES: Company claims that substantial reduction of splits from running cupped and warped lumber is easily accomplished with new blanker. Machine is placed between feed table and matcher to presurface board before entering matcher. Blanker has built-in jointer bar for top and bottom cylinders. Bottom head cylinder can be pulled out for changing knives without disassembling motor, and all operating adjustments can be made from front, or working, side of machine. Sectional beveled top feed rolls bear on top near the edges of cupped lumber. The 469M is powered by three motors of 30-75 and 100 h.p.

Air Press

MFR.: A. Schrader's Son, Div. Scovill Mfg. Co., Inc., Dept. WP, 470 Vanderbilt Ave., Brooklyn 38, N. Y.
DESCRIPTION: Air press which can, among other things, stamp, coin,



broach, rivet, stake, press, shape, bend, and assemble.
FEATURES: Available as single-acting for impact jobs, and double-acting for squeeze and power withdrawals. Control and speed of cylinder and ram can be varied as desired. Is outfitted with two-bolt clamping which adjusts easily from 0 in. to 7 in. height, and has swing arc of 2 in. on each side of center.



Curved Edge Banding Blanket

MFR.: Russell Machine Co., Dept. WP, 410 Scribner Ave., N.W., Grand Rapids 4, Mich.
DESCRIPTION: Steam-heated flexible blanket for curved edge banding.
FEATURES: Blanket is composed of tubular steam passages, embedded in heat-resistant rubber. 50 lb. steam is introduced into header at one end, flows to header at other end, and returns. Temperature of 235° is reached, higher or lower temperatures secured by regulating valve adjustment. Blanket may be obtained in longest length necessary, but may be used on shortest work as well, singly, or

edge glued

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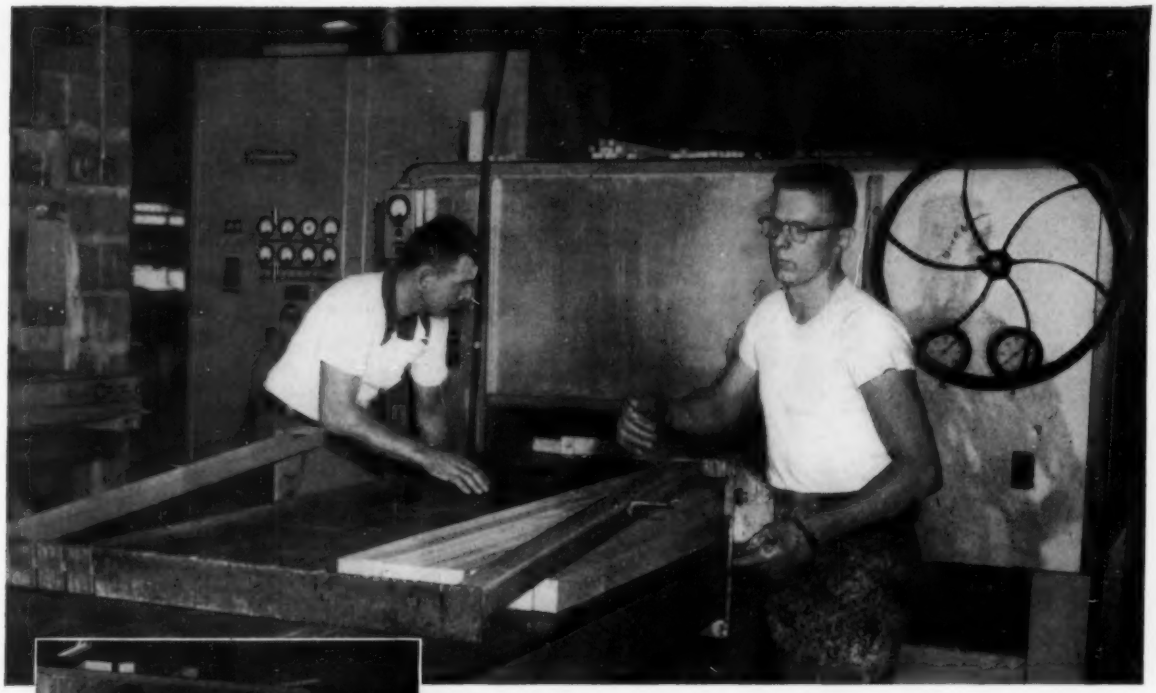

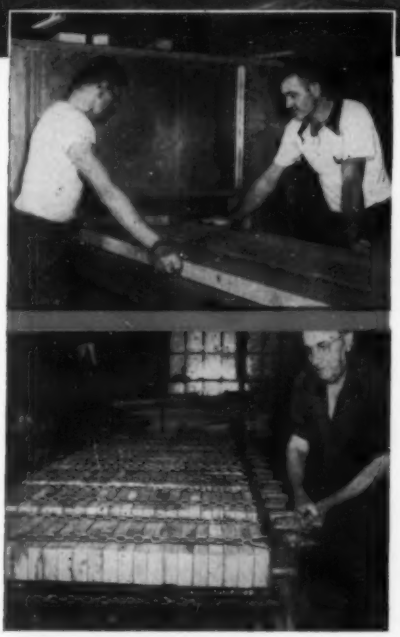

Thermatron bonded panels 120" x 10" come from the press at Bally Block Co. In three minutes—yet the old method required at least three hours just for the glue to set. Then each hand clamp had to be loosened to remove the panels. Incidentally, the space needed to handle the seven short panels shown in the bottom picture is just about the space taken up by the new Thermatron electronic equipment which gives many times more production.

Edge Bonding at Bally Block Co. now a fast, streamlined operation with THERMATRON electronic equipment

Bally Block Co., Bally, Pa., required volume production of edge bonded panels—which they get now with their powerful new 20 KW Thermatron radio frequency generator and hydraulic press installation.

The equipment easily accommodates stock 6 inches thick and 8 feet long, while longer panels are handled progressively. Once fed into the press, they receive an electronic "jolt" and the bond becomes stronger than the wood itself.

There's an extra, too. Bally Block found that large storage areas once given over to glue drying are now released for production instead. This gives them far more payload per factory foot.

Let us show you without obligation how modern methods can speed *your* wood bonding operation and achieve vast savings. Thermatron equipment is available up to 300 KW in all degrees of automation to suit your special purpose. Please request a copy of our latest bulletin W-13.

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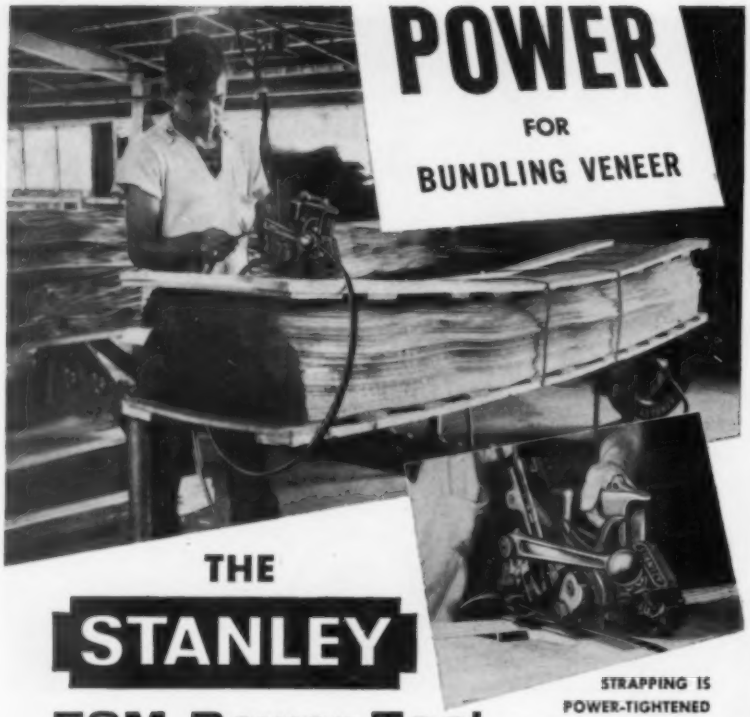

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ESM Power Tool
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STRAPPING IS POWER-TIGHTENED TO PRE-SET TENSION

FRANK M. ADAMS, SUPERINTENDENT OF ROBERTS & STRACK VENEER CO., INC., NEW ALBANY, INDIANA, SAYS – STANLEY STEEL STRAPPING TEAMED UP WITH THE STANLEY ESM POWER TOOL BROUGHT THESE IMPORTANT ADVANTAGES . . .

Better protected, more compact, uniform, strongly strapped bundles with less operator fatigue.

Virtually no breakage or damage in shipment – by truck and rail – all over the United States and into Canada.

Easier handling. "Uni-Tieing" veneer strips into bundles – 100 to 500 lbs – permits speedy movement by overhead conveyor to distant storage point.

"Immeasurable" dividends in customer satisfaction and good will.

Mail coupon for free catalog and special lumber folder showing how "Uni-Tieing" dimensional lumber, sheathing, veneer strips, flooring, specialty lumber, etc., with Stanley Steel Strapping saves time and money at mill or yard.

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Telephone: BAldwin 9-2021

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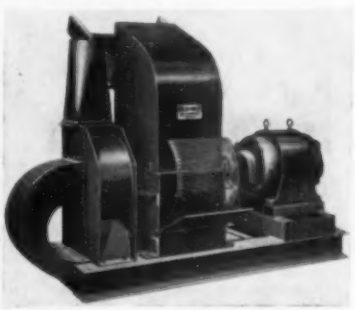
in multiple. Is self-restraining and will not blow out where not in contact with work pieces. Made 4¼ in. wide and 11/16 in. thickness—allowing it to follow small radii, circular shapes, kidney, oval, or free.

Carbide Router Bits

MFR.: Radial Cutter Mfg. Corp., Dept. WP, 841 Bond St., Elizabeth 4, N. J.
DESCRIPTION: New line of carbide router bits, guaranteed against tips breaking off.
FEATURES: Constructed of special carbide with hardened steel shanks, heat treated to 55-60 Rc to withstand shock and vibration. Also have tapered web in router flute to prevent breakage and eliminate weak spots, and high "hook" angle to eliminate pushing. Will cut soft or hardwoods, plastics, and composition material.

Abrasive Segments

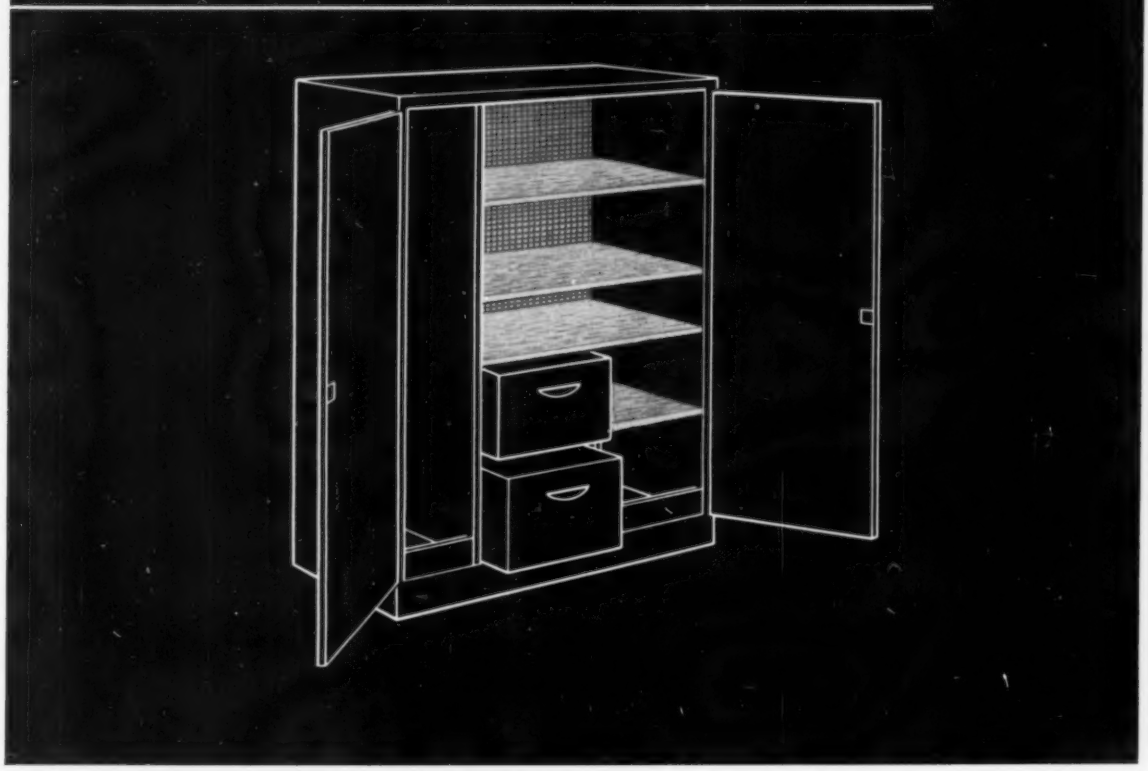
MFR.: The Carborundum Co., Bonded Abrasives Div., Dept. WP, Niagara Falls, N. Y.
DESCRIPTION: V-40 bond segments, for grinding all ferrous and non-ferrous metals.
FEATURES: Made of aluminum oxide abrasive grain in variety of shapes used in all standard chucks. Especially designed for use on plates, castings, machine parts, and machine knives. New type of waterproof pad, applied to segment with special resilient cement, assures better holding power in the chuck. A convenient feature is the recess in end of segment where specification sticker is placed for easy reference to size, grit, grade, bond, and other information.



Hammer Grinder

MFR.: Duplex Mill & Mfg. Co., Dept. WP, 740 Sigler St., Springfield, Ohio.
DESCRIPTION: Kelly Duplex industrial hammer grinder for reducing and pulverizing wood scraps, or anything grindable.
FEATURES: All grinding is done in mid-air. Swinging hammers, made of special abrasion-resistant alloy steel,

Look what's happened to Hardboard



Weyerhaeuser 4-Square Industrial Hardboards help make better products . . . for less

STIFFNESS AND RIGIDITY without brittleness! Outstanding machinability. Light tan in color, wide range of thicknesses and uniform densities. These are some of the advantages of Standard Weytex* that can mean worthwhile production economies . . . economies important in the face of rising costs because they help you make better products . . . for less!

Standard Weytex is manufactured by a special, dry process method that gives it an edge in utility, workability, performance. Can be worked easily and while outstanding for toughness and strength, is easy on tools.

The smooth surface saves on filling and sanding costs; light color means better coverage with less finishing material. Whether you use a graining system, decals, enamels, clear or pigmented lacquers, Standard Weytex takes finishes evenly and has low absorption. In products such as that shown above . . . it provides a smooth snagfree surface; contributes to the dimensional stability and quality of the finished product. Let Standard Weytex prove itself on your own products . . . on your own production line.

*T.M. Reg.

Standard Weytex is smooth on one side and has a screen impression on the other. Panels are light tan in color with a pleasing fiber pattern.

- Takes all types of finishes including wiping stains, lacquers, air-dried and baked-on enamels. An ideal base for plastics, fabrics, veneers.
- Excellent gluing, laminating characteristics. No delamination nor peeling.
- Splinterproof, sliverproof. No grain to raise, check or craze.
- Ideal for: furniture parts, automotive foundation parts and panels, sliding panels, cross banding, core material, mirror backs, cabinets, toys and games, TV backs, displays, signs, containers and many other uses.
- Available in the following thicknesses: 1/12", 1/10", 1/8", 3/16", 1/4".

Weyerhaeuser Sales Company

DEPARTMENT HF-76

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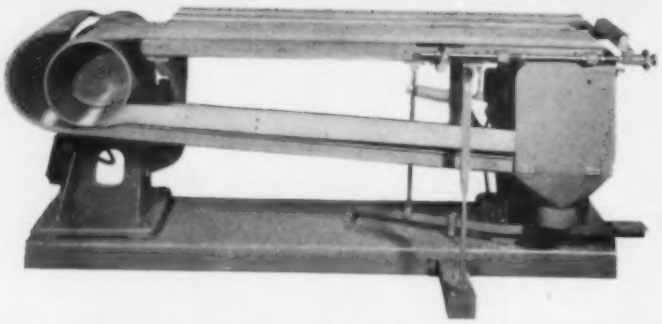

OAKLEY MODEL-H SEMI-AUTOMATIC DRAWER SANDER

- **Unique dual motor drive.**
- **Non-friction, non-heating front platen and lip.**
- **Exclusive semi-automatic foot pedal control.**

New! Tested! Unexcelled for dovetailed lip drawer work requiring keen accuracy and fast production. Economical, trouble-free operation with built-in *quality*. Check specifications now!

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ALL-BIRCH PLYWOOD

From the world-famous forest resources of Finland, imported all-birch plywood – sizes up to 4' x 6', all thicknesses . . . cut to size to buyer's specifications.

All-birch ¾" 13-ply or 15-ply laminates for cabinet doors, table tops, etc.; lumber core for table tops; door panels of birch plywood (⅛" 3-ply).

Also standard hardboard, ⅛" and 3/16" thickness, with outstanding physical properties.

Dependable deliveries from Finland's largest and oldest plywood source. Quotations submitted – your inquiries invited.

FINWOOD
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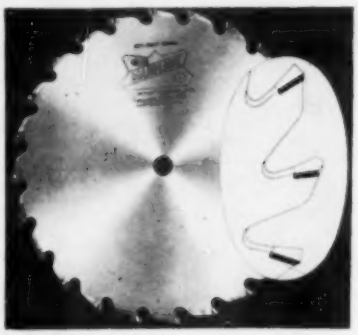
break up the material and then pass it through a steel screen perforated to desired fineness. Friction is almost eliminated — thus reducing operating costs. Hammers can be reversed for longer life and screens changed in 30 seconds without removing mill cover. Available in five models, with throat openings from 12 in. to 24 in., in motor range from 30 to 150 h.p., and in either direct connected motor or belt drive.

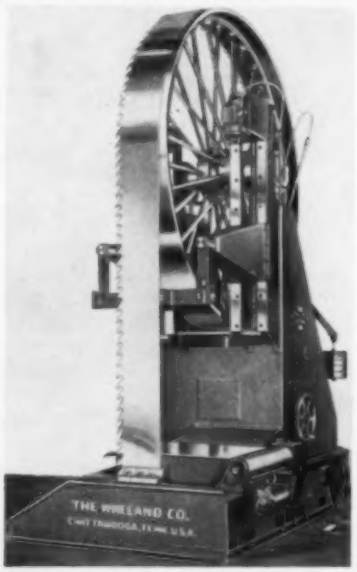


Carbide Tipped Saws

MFR.: W. F. Meyers Co., Dept. WP, Bedford, Ind.

DESCRIPTION: New line of carbide tipped saws, the Meyco Mainline Uni-Chip.

FEATURES: Have alternating double-beveled and straight raker teeth, for long life in cutting teeth, and smooth chip-cleaning with raker teeth. Come in several diameters and different number of teeth specially designed for ripping, metal-cutting, precision cutting, or all-purpose cutting.



8 Ft. Band Mill

MFR.: Wheland Co., Dept. WP, Signal Mountain Rd., Chattanooga, Tenn.

DESCRIPTION: 8 ft. band mill, Model BM-800, built for 12 in. or 14 in. wide saws.

FEATURES: Fast cutting, can carry up

WILLIAMS-WHITE HOT or COLD

Laboratory Production PRESSES

If your company is expanding or if you are "new comers" in the plywood, veneer or hardboard field, consider WILLIAMS-WHITE & CO. custom built hot or cold presses before you buy! Built to your exact requirements, WILLIAMS-WHITE presses represent the peak of up-to-date design and craftsmanship.

Your specifications as to capacity, plate size, number of openings, types of controls, etc., are built into each WILLIAMS-WHITE hot or cold press. They are available in column or A-frame construction, with steam, fluid or electrically heated plates.

Above is a typical WILLIAMS-WHITE laboratory press, of 90 tons capacity, plate size 38" x 24" and daylight opening 12 inches.

At right is a WILLIAMS-WHITE cold press of 575 tons capacity, with plate size 106" x 54" and adjustable daylight opening, 80 to 123 inches.

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400 EIGHTH ST. • MOLINE, ILLINOIS

PRESSES • BULLDOZERS • BENDERS • PUNCHES • SHEARS

to 20,000 lbs. tension on saws. Main features include: motorized doubly-supported top saw guide, motor-driven live lumber roll, saw straining device, low center of gravity, sturdy structural steel bed and housing, dust-proof construction, self-aligning double tapered roller bearings with short bearing centers, large diameter shafts.

Strapper and Tightener

MFR.: The Stanley Works, Steel Strapping Div., Dept. WP, New Britain, Conn.

DESCRIPTION: Jet, pneumatic strapper (lower picture), and HDX heavy-duty hand tightener (upper picture).

FEATURES: Jet is light, 4 lb. tool, housed in magnesium, featuring preset tensioning using less air pressure, unlimited strap take-up, two handy start-stop throttle controls, and quiet motor. Strapping, from ¾ to ¾ in., .020 gauge, can be tightened to predetermined and uniform tension simply by setting air pressure regulator. Operation entails insertion of strap and depression of a throttle, and air motor does the rest. HDX tightener replaces former TXN tool in speeding the tightening of heavy-duty strap on special production jobs having narrow surfaces, and is lighter weight. Utilizes new pusher-type, "duck-bill" head which has single screw adjustment for ¾ to 1¼ in. strapping of various gauges. Strapping is snapped off at seal by duck-bill when tool is pushed forward and down. New feature is front release grip which makes insertion of strap easier and facilitates release of tool.

Splicer Adhesive

MFR.: National Casein of New Jersey, Dept. WP, Broad and Fulton Sts., Riverton, N. J.

DESCRIPTION: SPLYSET 200, thermosetting resin powder containing catalyst lubricant requiring only addition of water by user to obtain waterproof thermosetting resin.

FEATURES: Suitable for application by spray gun or directly at the tapeless splicer machine. An assembly time of up to four days can be obtained, and in storing, the spread stock is stored under normal veneer room conditions. Is available in 25, 50, 100, and 150 lb. containers.

R-F Heating Tubes

MFR.: Machlett Laboratories, Inc., Dept. WP, Springdale, Conn.

DESCRIPTION: ML-5530-H, thoriated-tungsten filament, forced-air cooled triode, for 3 to 6 k.w. industrial radio frequency heating units.

FEATURES: Is a modification of previous model, incorporating a new terminal structure and given increased plate voltage and power ratings. Is rated for maximum plate input of 10 k.w. at frequencies to 30 m.c. Offers a broad load impedance range varying from 8.5 k.v., 1.18A to 5.7 k.v., 1.75A. 4 k.w. anode dissipation requires only 250 c.f.m. at 1.7 in. of water static pressure. Triode features high transconductance characteristics, and is efficient and easy to drive in class C operation.

OLIVER Shaper cuts smoothly... feeding stock to cutters with or against the grain

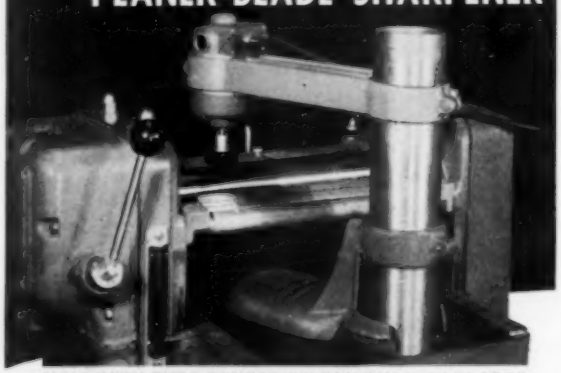
Oliver also makes an efficient smaller Shaper, and a powerful, fast Double-Spindle Shaper. Write for Bulletins.

The No. 287-T Shaper has all the advantages and ruggedness of a two-spindle machine. It rabbets, grooves, flutes, routs and shapes with speed and accuracy. Spindle runs true at highest speeds. Offered with motor-on-spindle for speed of 7200 r.p.m. or with close-coupled belted motor drive for speeds up to 10,500 r.p.m. Write for Bulletin No. 287-T.

OLIVER MACHINERY COMPANY

Established 1890 GRAND RAPIDS 2, MICH.

NOW! Foster Portable PLANER-BLADE SHARPENER



NO DOWN TIME CAUSED BY REMOVAL OF BLADES

THIS NEW ASSEMBLY for the Foster Portable Jointer-Blade Sharpener converts it to a Portable PLANER-Blade Sharpener for use on any single or double head surfacer.

Unlike other planer blade sharpeners, this grinder is portable and slides on the planer table, grinding blades perfectly parallel with the table top.

No installation... Amount of cut is actuated by raising and lowering planer table.

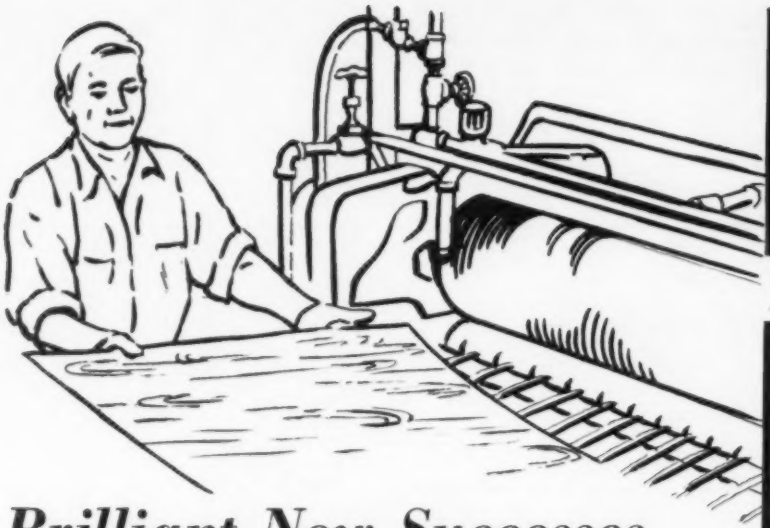
This low-cost machine will sharpen your planer blades accurately in less time than required to set up other sharpeners.

Sold separately as a complete unit or, accessories will fit all Foster Portable Jointer-Blade Sharpeners now in use.

Circulars and prices on request

FOSTER SUPPLIES COMPANY

6122 Milwaukee Ave., Dept. WW, Chicago 30, Ill.



A West Coast manufacturer speeds production of hollow core flush doors with the No. 22-D, 50".

Brilliant New Successes in Gluing and Laminating

For glue testing and development work, a leading glue manufacturer depends on the No. 22-D Spreader.

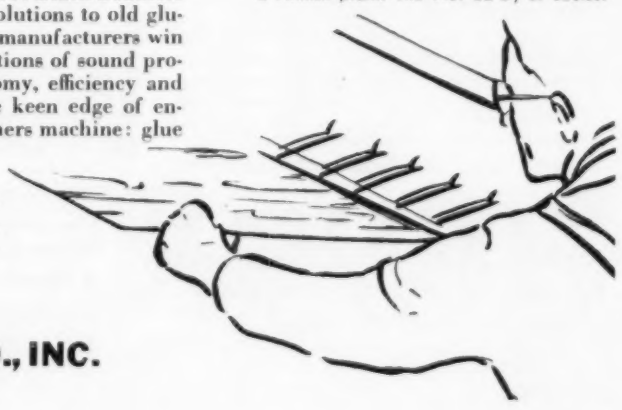
No.22-D Glue Spreader for liquid resins, casein and similar adhesives. Standard production sizes: 8" to 122".

Versatile No. 22-D Spreader helps produce laminated beams and roof trusses at a California mill.

Fast, economical production of plywood in a Finnish plant. The No. 22-D, of course.

On production lines, in glue rooms and laboratories . . . Black Brothers Gluing and Laminating Equipment provides new solutions to old gluing and laminating problems. Helps cost-conscious manufacturers win new competitive markets, too, through new applications of sound production techniques. Preferred for its proven economy, efficiency and speed, the versatile No. 22-D Spreader reflects the keen edge of engineering skill incorporated into every Black Brothers machine: glue spreader, mixer, press or clamp.

Shouldn't you consider a Black Brothers installation? Write for our Supplement to Bulletin No. 11-A which gives construction details and specifications on the No. 22-D Glue Spreader.



THE BLACK BROTHERS CO., INC.
MENDOTA 5, ILLINOIS

NEW CATALOGS and LITERATURE

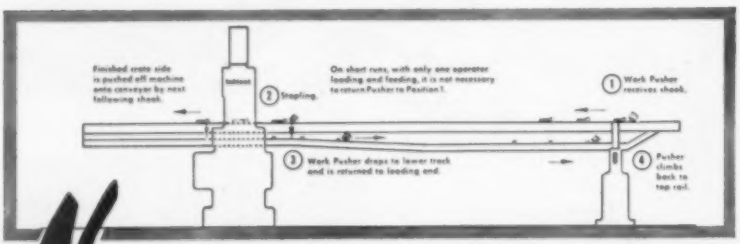
Special Presses. Williams-White & Co., Dept. WP, 400 8th St., Moline, Ill. Bulletin No. 201 describes and illustrates plastic molding presses, platen presses, aircraft laminating presses, laboratory and testing presses.

Cutterheads, Knives. Dependable Machine Co., Dept. WP, 3440 High Point Rd., Greensboro, N. C., 18-page illustrated bulletin covering entire line of cutterheads, and 6-page illustrated bulletin on knives.

Setworks. Wheland Co., Dept. WP, Signal Mountain Rd., Chattanooga, Tenn. Bulletin SW-2 gives complete information on improved No. 7-E roller bearing setworks.

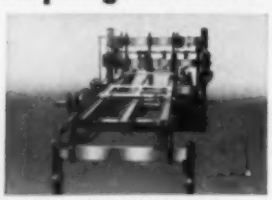
10 In. Circular Saw. Delta Power Tool Div., Rockwell Mfg. Co., Dept. WP, 668F N. Lexington Ave., Pittsburgh 8, Pa. Folder describes new 10 in. tilting arbor bench model circular saw with pictures and specific detail on construction, accuracy, and safety.

Moisture Meter. Moore Dry Kiln Co., Dept. WP, Jacksonville 1, Fla. Bulletin 5603 describes and depicts Moore's moisture meter with interchangeable electrodes for lumber, veneer, timbers and ties, and moisture gradient.

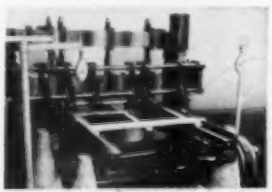

Finished crate side is pushed off machine onto conveyor by next following shook.
bottom
2 Stapling.
On short runs, with only one operator loading and feeding, it is not necessary to return Pusher to Position 1.
1 Work Pusher receives shook.
3 Work Pusher drops to lower track and is returned to loading end.
4 Pusher climbs back to top rail.

New For Hand-Feed Stapling Cleaters

SARANAC FEEDING TABLE AND SELF-UNLOADING WORK PUSHER . . . with these 12 Benefits


Feed table with shook and pusher.

Loading pusher . . . stapling shook.


Work freed at delivery end.

1. Eliminates big investment in work fixtures.
2. Eliminates fixture maintenance, storage costs.
3. Insures highly accurate crate, box parts.
4. Boosted output soon pays for the equipment.
5. Reduces labor cost and operator fatigue.
6. One man can operate on small runs.
7. Machine down-time eliminated—extra work pushers are set up while another job runs.
8. Gravity assists return of work pusher.
9. Work may be delivered directly to conveyor.
10. Pusher automatically frees work when done.
11. Adjusts for many sizes, styles of work—from 6" x 10" to 100" x 315" depending on machine's limits.
12. Acclaimed by leading box makers!

WRITE TODAY FOR SPECIFIC DATA AND PRICES

SARANAC MACHINE COMPANY
BENTON HARBOR • MICHIGAN

Manufacturers of the World's Largest Line of Fastening Machinery

Choosing Sandpaper. Behr-Manning, Div. of Norton Co., Dept. G, Troy, N. Y. 16-page, pocket-sized booklet, "Sandpaper — How To Choose It", offers help to shop worker in choosing and correctly using proper sandpaper for surface finishing of wood, metals, and plastics.

Portable Router. Stanley Electric Tools, Div. of The Stanley Works, Dept. WP, New Britain, Conn. Book, "The Router . . . What It Is and Does" contains detailed descriptions and illustrations on all the varied uses to which a portable electric router can be put. Price: 50c.

Supervisors Safety Manual. National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill., has published a large, illustrated book providing foremen with a comprehensive guide to all phases of industrial safety. Price is $3.25 to Council members, double for non-members.

Paint Heaters. The DeVilbiss Co., Dept. WP, Toledo 1, Ohio. Bulletin gives details on portable paint heating unit, paint heater standard components, and standard package heater installations.

"Monomast" Lift Truck. Hyster Co., Dept. WP, 2902 N.E. Clackamas St., Portland 8, Ore. Bulletin, Form No. 1402, covers operating advantages of "Monomast" lift trucks in 3000 and 4000 lb. capacities, including diagrams, specifications and pictures.

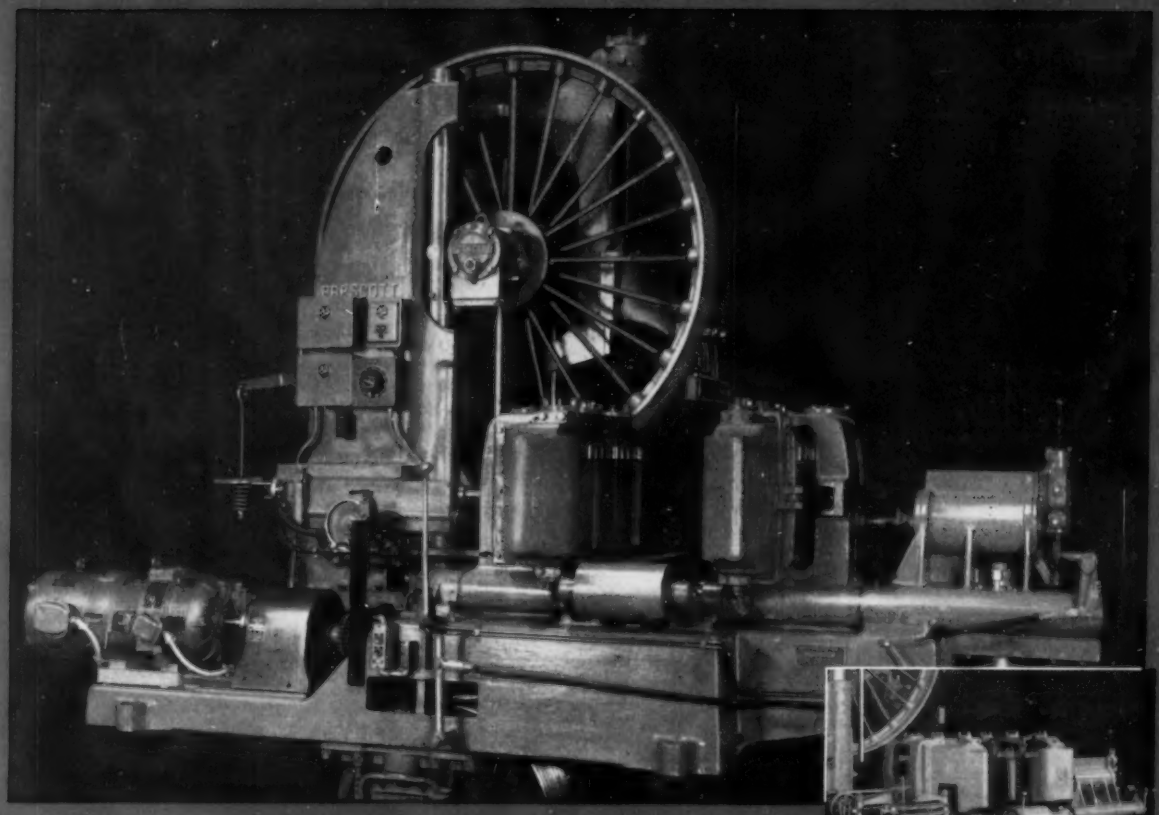
Strapping Catalog. Acme Steel Co., Dept. WP, 2840 Archer Ave., Chicago 8, Ill. New 44-page illustrated steel strapping catalog contains constructive ideas to help speed packaging, lower handling costs, and achieve safe shipment.

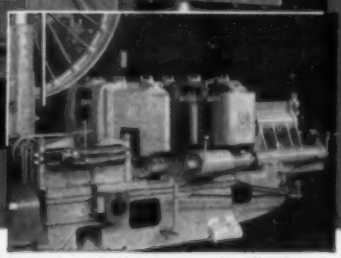
Tacker-Stapler. Heller Corp., Industrial Fastener Div., Dept. WP, 2135 Superior Ave., Cleveland 14, Ohio. 4-page bulletin 1503-17 gives specifications of stapler with and without anvil and describes applications of tacker-stapler on production lines, in shipping rooms, and maintenance departments.

Single Spindle Shaper. Oliver Machinery Co., Dept. WP, Grand Rapids 2, Mich. Bulletin on No. 287 single spindle shaper or variety moulder has specifications, pictures, and details of machine and additional information on adaptations and equipment.

Bayonet Saw Use. Porter-Cable Machine Co., Dept. WP, Syracuse 8, N. Y. Booklet on "How to Use the Porter-Cable Bayonet Saw," model 148, contains pictures and details on maintenance and preparation, different methods of cutting, and special applications. (25c per copy.)

Wood Hog. Gruendler Crusher & Pulverizer Co., Dept. WP, 2915 N. Market St., St. Louis 6, Mo. Bulletin on wood hog of the knife type contains detailed illustrations, performance table, and dimension diagram and table.





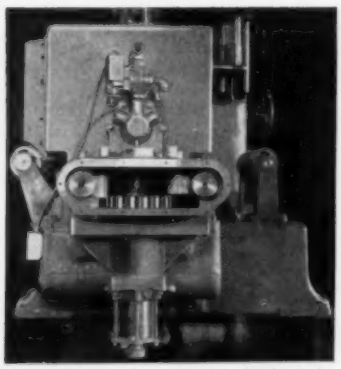
Heavy-Duty Feedworks — safe, vibrationless, extremely compact and precisely accurate. Eliminates wane and scant sawing.

PRESCOTT *vertical resaws...for the profitable production of more saleable lumber per log*

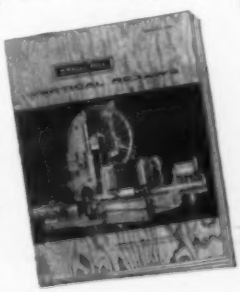
Increase your mill's output and reduce your operating expenses by installing a Prescott Vertical Resaw to get *all* the lumber out of *every* log. Precise mechanical accuracy gives you much better grade recovery — better sawing in all grades — and a high volume of smooth, straight, saleable lumber. Prescott Vertical Resaws minimize waste — practically eliminate downtime — deliver efficient, day-after-day performance for years — and return a greater net profit to you.

Here's how they do it — some of the major features of Prescott Vertical Resaws, combining the latest advances in resaw engineering and basic service-proved Prescott designs:

- Practical, Heavy-Duty Sizes — 5-6-7 Foot
- One-Piece Vibrationless Base
- Perfectly Balanced Wheels and Shafts
- Self-Aligning Roller Bearings
- Simplified, Ultra-Sensitive Knife-Edge Straining Device
- Compact, Heavy-Duty Feedworks System
- Continuously Variable Feedworks Drive
- Pre-Set or Lever Air Setworks
- Side Sawing and Self-Centering — Instantly Changeable
- Completely Self-Contained



Double Rack and Pinion Combination Setworks — spring-proof and instantly changeable from side sawing to self-centering.



New . . . Illustrated Literature containing complete technical data and detailed specifications is now available. Call, wire or write for this comprehensive material on Prescott Vertical Resaws or the services of one of Prescott's experienced sawmill engineers.

For Profitable Sawmill Operation... **SPECIFY**

PRESCOTT

HIGH EFFICIENCY, HEAVY-DUTY SAWMILL MACHINERY

THE PRESCOTT COMPANY, *Menominee, Mich.*

ALONG THE PRODUCTION LINE

Photo Courtesy Landahl Conveyor Co.

CHAINLESS CONVEYOR used in furniture plant to store beds

Chainless Overhead Conveyor

A UNIQUE CHAINLESS overhead conveyor in a large Southern furniture plant serves as storage unit for beds. Each section averages about 400 ft. total length with 100 carriers spaced on 4 ft. intervals.

The conveyor is powered by a caterpillar drive unit, with drive dogs mounted in pairs on an endless roller chain traveling around two sprockets, and coming down over trolleys to engage the cylinder housing to push the conveyor forward. A worm-type reducer prevents any runaway danger. The conveyor was made of a series of steel rods connecting the trolley units instead of the usual chain or cable. The rod ends are anchored in ball-type joints arranged to pivot freely within bearing sockets of the trolley housing. A slight telescoping action is thus provided by the universal joint construction which provides ample allowance for expansion and contraction. The conveyor track consists of two standard steel angles mounted within the track plates for straight, horizontal travel, and additional plates are provided to accommodate horizontal or vertical curves.

The ball-bearing wheels of the trolleys seemed to overcome thrust loading from any direction and any type of carrier can be accommodated. The trolleys consist of cylindrical housings with either 4 or 8 ball-bearing wheels assembled on both vertical and horizontal planes at 90° intervals. Fine flexibility is provided by this conveyor with low power requirements.

Small Mill Automatic Lumber Sorter

A SMALL MILL uses a specially designed automatic lumber sorter in place of the conventional green chain, which makes six sorts into stalls or pockets with one man handling the entire sorting operation from a control station outside the mill. The sorter is 80 ft. long and operates in the manner of an extended power roll case, with trip-arms at the head of each stall or pocket. It has six stations, three on each side to unload the lumber, taking 16, 20 and 24 ft. lengths.

As shown in the illustration, control is provided by two dials, one divided into six parts, to stop the lumber at the right place, and the other set to take the lumber off at the particular station. Sorting is performed with air-controlled

THE MAN WITH THE ANSWERS . . .

FOR YOUR AUTOMATION & MATERIALS HANDLING

TO BOOST PRODUCTION . . . CUT LABOR COSTS!

Use manpower *only* where manpower is needed! Walters Automatic Materials-Flow Systems replace expensive labor with consistent, never-tiring precision machinery . . . production costs drop fast!

Walters offers top engineering and plant layout "know-how", plus over 28 years experience . . . *exclusively in the woodworking field.*

YOUR PROBLEM IS DIFFERENT

That's why it's best to let the Walters representative study your problem with you. He has the experience, the facilities . . . and the answers!

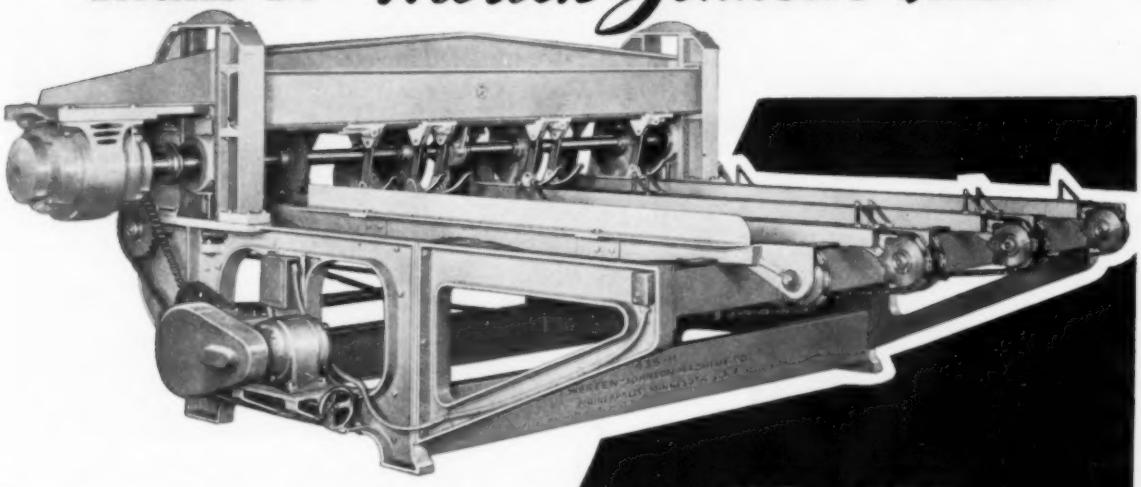
- Cable Lumber Lifts
- Cable Tilt Lifts
- Cut-off Saw Tables
- Cut-off Saw Tailboys
- Facer Feeders
- Planer Feeders
- Edge-Jointer Feeders
- Edge-Jointer Return Feeders
- Cross-belt Conveyors
- Rip-saw Conveyors
- Sorting Conveyors
- Powered Roller Conveyors
- Floor-to-floor Lifts & Conveyors

SPECIAL HANDLING EQUIPMENT — ENGINEERED TO YOUR SPECIFICATIONS

WALTERS W MFG. CO. SINCE 1927 — P.O. BOX 498 — PHONE 2203 — MORRISTOWN, TENN.

A Tremendous VARIETY of Uses...

BACKED BY Mereen-Johnson QUALITY



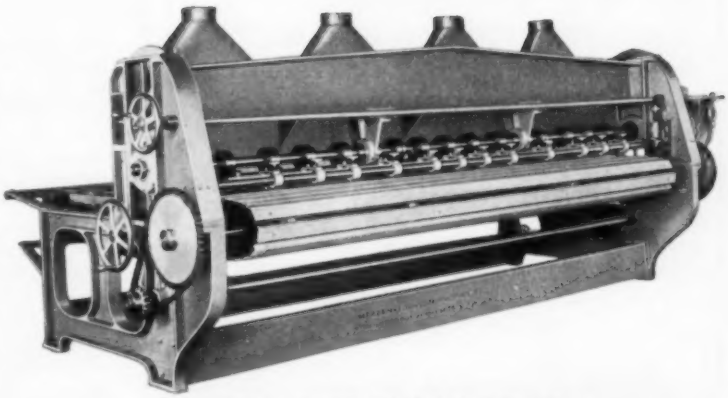
NO. 435

MULTIPLE CUT-OFF SAW EQUALIZER *and* GROOVER

IT'S BEST KNOWN AS A PLYWOOD SIZER. But this Mereen-Johnson machine has earned popularity in sash and door, furniture, cabinet and refrigerator factories, too. It will cut up long boards into short, accurate pieces . . . handle boards, panels or sheets of any size—cutting them perfectly square on both ends . . . cut any number of grooves of nearly every width on the same stock. It will even do these three operations *simultaneously*.

Special accessories permit its use for cutting multiple veneer, plywood and insulating material. It is often used as a slat bed cut-off and ripper . . . for dry saw cutting . . . for two-way cutting . . . and for grooving and trimming step-ladder sides.

Sizes run from 4′ to 24′. Let our engineers work with you to develop a combination unit that will fit your needs.



Rear View of 144x48 Slat Bed Machine

Write for Bulletin No. 435

Mereen-Johnson MACHINE COMPANY

4401 LYNDALE AVENUE NORTH • MINNEAPOLIS 12, MINNESOTA

LONGEST BED

OF ANY 6" JOINTER IN ITS FIELD*

FULL 48" CAST IRON BED ASSURES PERFECT EDGE ON ANY LENGTH STOCK.
EXTRA RIGID • PRECISION GROUND

Here is a 6" jointer with features galore. The rigid *center-mounted* fence insures 100% true edges. Knife-setting is always quick and sure with jackscrews in the cutterhead.

- BOTH TABLES FULLY ADJUSTABLE—ON INCLINED DOVETAILED WAYS FOR EASY ALIGNMENT
- 45° AND 90° POSITIVE STOPS ON FENCE
- FULL CUTTERHEAD PROTECTION AT ALL TIMES
- NEW CUTTERHEAD GUARD ASSURES SAFE OPERATION
- GUARD EASILY REMOVED FOR RABBITING TO 6"
- 3 SAFETY-TYPE HIGH SPEED CUTTERHEAD KNIVES
- ALL CAST-IRON CONSTRUCTION MOUNTED ON ENCLOSED STEEL FLOOR STAND

PLANERS • HOLLOW-CHISEL & CHAIN MORTISERS • JOINTERS • TENONERS • ARBOR & BAND SAWS

Dealers in Principal Cities

CLIP AND MAIL COUPON TODAY FOR FULL DETAILS

Yes, rush me full information on Powermatic's Model 50 6"-Jointer (or Model 60 8"-Jointer).

Name_____

Address_____

City & State_____

MAIL TODAY TO DEPT. 2

POWERMATIC MACHINE COMPANY

McMinnville • Tennessee

lift arms directly above each stall or pocket in the roll case, which trip the lumber from the rolls down slideways into the proper station for tallying and stacking.

This sorter is operated with air or by hydraulic power and weighs about 10 tons. It was delivered in 20 ft. sections for easy handling and the sections were bolted together when the installation was made. The cost was estimated to run between $6,000 and $7,000. The operator seen behind the sawyer is able to handle all sorting operations from this point where he has full view of the lumber on the sorter rolls.

Photo Courtesy Junction City Machine Works

SMALL MILL automatic sorter makes six sorts under control of a single operator

Wood is Still Best Prosthesis Material

A PROSTHESIS is the medical term for artificial limb, the manufacture of which has become big business due to the number of hot and cold wars which have been waged within our generation. Wood is still the favored prosthesis material. Our government learned this after spending a few million dollars in research to uncover a better material.

The wood generally preferred for the manufacture of artificial limbs is said to be English red willow but various other upland willow species are also used. Other woods used to a limited extent include ash, birch, maple and yellow poplar. Recent reports indicate that 90% of all artificial limbs are made of wood, with more than 700,000 bd. ft. being used for this purpose in an average year.

A prosthesis is not cheap, as any amputee can attest, with prices ranging from $200 to $600. On the other hand, there is probably no other wood product which requires as much skill and careful craftsmanship, to say nothing of the many fittings and adjustments. After the first fitting, the first adjustment is usually made within six months. Further adjustments are required every 3 or 5 years for an adult and more often for a growing child.

Added to this is the cost of transforming a crude octagonal wooden block, of a dimension of about 10 x 10 x 20 in. into an accurately simulated wooden limb which incorporates mechanically all of the movements a human leg requires to move the human body in action or in repose. To effect this without unnecessary pain, clumsiness or fatigue requires consecrated workmanship not found in a machine.

Artificial limb stock is usually air seasoned carefully under regulated drying conditions for 2 or 3 years before use in the form of blocks. Most concerns center-bore these blocks while they are still green. The block lengths range from 10 to 20 in. and from 4-in. square section to 10 in. Holes

2 new chemicals

give positive, low-cost grass and weed control

DOW RADAPON*

For grasses, cattails and Phragmites

Here is a new chemical spray which gives positive results on all common grasses. Developed by Dow Chemical Company, RADAPON has proved its effectiveness in exhaustive tests.

Use RADAPON to keep grass out of storage yards, alleys, sidings and ditches. It is effective even on plants in standing water, making chemical control of cattails in ditches practical. RADAPON saves time and money and eliminates use of large crews and heavy equipment to keep ditches clean.

For control of weeds as well as grasses, RADAPON may be mixed with 2-4-D or 2-4-5-T formulations.

DOW BARON*

For both grasses and broad-leaved weeds

Longer-lasting chemical weed control is now possible with new BARON, a non-selective herbicide.

This highly-effective liquid spray is absorbed through both leaves and root system. It remains in the soil for extended periods of time, giving control of germinating seedlings following initial treatment.

BARON controls both broad-leaved weeds and grasses. Use it to eliminate unsightly, unwanted vegetation that creates fire hazards, breeds insects and rodents, and reduces plant efficiency.

**Trade Mark Dow Chemical Company*

Features of Radapon and Baron

Consistent results • Economical
Mix easily with water
Easy to apply • Safe

CHAPMAN®

CHAPMAN CHEMICAL COMPANY

National distributor to the forest products industries of Radapon and Baron for the Dow Chemical Company.

MEMPHIS 1, TENN.

Minneapolis, San Francisco, Portland, Ore., Charlotte, N. C.

Mail coupon for information and prices

Chapman Chemical Company
P. O. Box 138, Memphis 1, Tenn.

Please send complete data on Radapon and Baron for weed and grass control.

*Name*_____

*Address*_____

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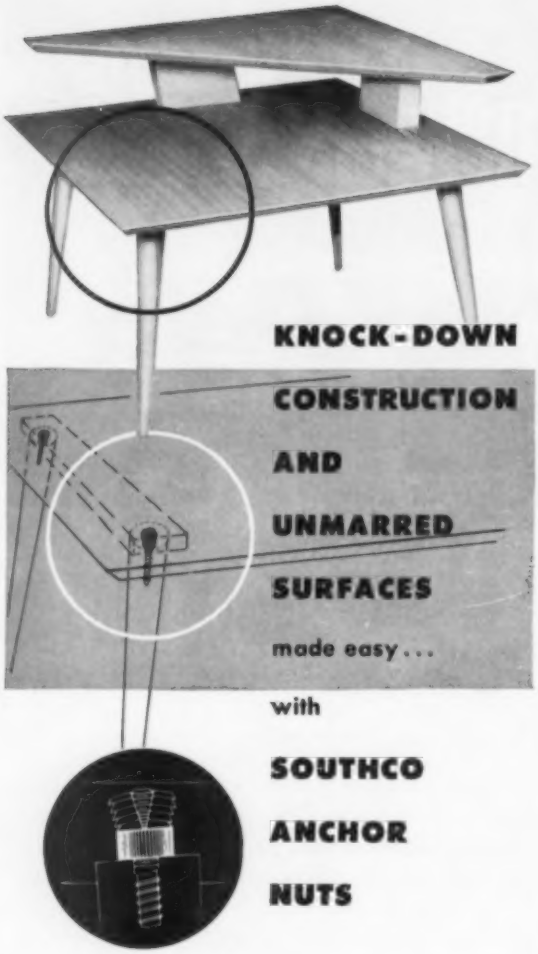

KNOCK-DOWN CONSTRUCTION AND UNMARRED SURFACES made easy... with SOUTHCO ANCHOR NUTS

When your design includes SOUTHCO Anchor Nuts, you benefit four ways:

- strong, rigid assembly
- metal threads for repeated use
- free and clear wood surfaces
- lower packaging and shipping costs

The four legs of this table, for example, are fastened with ¼-20 SOUTHCO Anchor Nuts and hanger bolts. The permanent metal threads provided by SOUTHCO Anchor Nuts assure a tight fit for the life of the table, regardless of the number of times the legs are removed and replaced.

SOUTHCO Anchor Nuts are quickly installed, lock against torque and pullout. For complete data, write SOUTHCO Div., South Chester Corporation, 250 Industrial Highway, Lester, Pa.

SOUTHCO FASTENERS

PAWL, SCREW AND SPRING · DRIVE RIVETS
ANCHOR NUTS · ENGINEERED SPECIALTIES

OFFICES IN PRINCIPAL CITIES

WHEREVER TWO OR MORE PARTS ARE FASTENED TOGETHER, STANDARD AND SPECIAL DESIGNS FOR IMPROVED PERFORMANCE AND LOWER PRODUCTION COSTS

bored in the center range from 2 in. to 4 in., according to the size of the block.

Properly air-dried blocks free from checking are cut to rough shape at the band saw. The balance of the shape is usually produced by hand carving. Holes are bored and dowels are inserted at various portions of the prosthesis to provide added strength required. The leg portion is usually covered with wet rawhide which contracts in drying to provide the wood surface with a durable protective coating. Its primary purpose is to prevent splitting, abrading or denting the leg form.

A complete prosthesis is made up of an upper, knee, lower, ankle and foot. All parts are fashioned separately and are then assembled by ingenious cords and actions to coordinate the various parts for efficient operation and freedom of movement. The completed artificial leg provides practically every movement of the human leg.

Bulk Handling of Finishing Materials

A LARGE FURNITURE PLANT which maintains fast-moving conveyorized finishing production expedites handling and delivery of finishing materials for mixing and delivery to the spray booths by receiving volume shipments at outside storage tanks, well insulated and electrically-heated. A pump located inside, and connected to all tanks, pumps desired materials to an inside mixing tank in the finishing department. This is a self-agitating pump which returns material to the top of the tank when the line to the finishing department is shut off. A continuous line from the discharge of the pump to the top of the tank provides continuous recirculation. A pressure valve in the line cuts off the recirculating system when the line is open to the finishing department and a pressure gauge measures the volume of material remaining in the tank.

BECAUSE IT'S *Super Honed!*

MEYCO – *the finest money can buy!*

Each carbide tip has an EXTRA, fine-grit, diamond honed, lapped edge for razor-keen sharpness, for smoo-oo-th cuts, for long, long life . . . fine steel blades are engineered for carbide tipping; carbide tips and blade go together like ham and eggs. This EXTRA quality is reflected in YOUR results! Many years of experience with carbide gives MEYCO the know-how that is so valuable to you. Practically any sized blade, any number of teeth, standard or specials . . . your inquiry is invited. For information and prices, write for Catalog No. 25.

ESTABLISHED 1888

60 YEARS OF FINE CUTTING TOOLS

W. F. MEYERS CO., INC., BEDFORD, INDIANA

Photograph by Hube, Henry, Hedrick, Blessing. Holabird & Root & Burgee, Architects

Teak brings the eternal, exotic beauty of the East into a room

We are proud of having been given the opportunity of supplying the matched teak face veneer used in the Members' Lounge of the magnificent American Bar Association Center. This center is dedicated to the preservation of representative government through a program of public education.

All the teak veneer in the Members' Lounge and the adjoining Board of Governors' room came from a single flitch.

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Teak • Butternut • Satinwood • Cherry • Rosewood • American Walnut • Prima Vera • Avodire • Limba • Knotty Pine • Cypress • Bosse • English Brown Oak • Koa • Hickory • Indiana Soft Textured White and Red Oak • Mahogany • Hard Maple • White Ash • Harewood • Orientalwood • Birch • Crowntree • Yellow Poplar • Zebrawood

HOE Carbide Tipped saws work better because . . .

THERE'S BETTER WORK IN HOE SAWS!

The precision teeth in HOE Carbide Tipped Saws insure perfect balance — faster cutting (which means more production) and longer life (which results in lower operating costs). All steels and carbides used in HOE saws are specially selected and held under rigid quality control. New furnace and tempering system assures superior quality and performance. Highly polished faces and sides mean smoother, cleaner cuts. Select your needs from list below. Special bulletins on any item available on request.

CARBIDE TIPPED SAWS for wood—plywood—plastics—non-ferrous metals—laminates—fibreboard—particle chip and flake board.

CARBIDE TIPPED TOOLS (KWIK-KUT line) Everything for the woodworking industry.

SOLID TOOTH CIRCULAR SAWS

NARROW BANDS (wood-cutting)

MACHINE KNIVES

GRINDING WHEELS & FILES

1 **PLANER**—(S type) rip and across the grain

2 **CUT OFF**—(L type) across the grain

3 **RIP**—(A type)

4 **TRIMMER**—(P type) more teeth for cleaner cuts on end of stock

5 **GROOVER**—up to ½" groove (can be nested for wider cuts)

6 **COMBINATION**—rip and across grain (N type)

R. HOE & CO., INC.

CARBIDE SAW & TOOL DIVISION
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Headquarters: 910 E. 138th St., New York 54, N. Y.
BRANCHES: 2700 S. E. Tacoma St., Portland 2, Ore. • 2917 Lamb Ave., Birmingham 11, Ala.

LEADING THE INDUSTRY SINCE 1828

Production Ideas

Continued from Page 25

sirable for producing large plies and face veneers for quality plywood panels. The smaller lathe makes possible the economical use of logs of small diameter, averaging around 18 in. The veneer made on this lathe is used as cross-banding in 4x8 ft. panels.

TWO TYPES OF LATHE CHARGER—The charger of the large lathe consists of two arms of heavy steel plate welded into box-girder shape. These arms lift the log from beneath and place it between the chucks of the lathe.

A pre-positioning device permits the operator to adjust the log accurately between the lathe chucks before actually placing it in position. This is a time saver for the lathe, boosting its production. The lathe chucks' position is simulated by a spotlight which guides the charger operator. He moves the charger arms until the ring center of each end of the log is illuminated by a small spot of light on either side of the charger. When this position is found, he has but to move the entire charger mechanism forward to place the log perfectly between the chucks.

The charger of the 4 ft. capacity core veneer lathe quickly centers the log at approximately its geometric center below the lathe chucks. From this point it is lifted vertically into position before the lathe knife. The log is placed in this "below the chucks" position by a kicker device which moves the log to be peeled from the convevor chain into the cradle of the lathe charger. The round shape of the log as it lies in this cradle automatically centers it for the lathe chucks.

TIMER FOR VENEER CLIPPER—As the veneer comes by the clipper operator, it passes under a rubber tired wheel which turns an electrical contact device. This device may be set to actuate the veneer clipper automatically for every 27 in. or 54 in. of veneer width. Independently of this device and cancelling its action, the clipper operator may use the clipper as his judgment dictates.

VENEER CLIPPER—Diamond Lumber Co. engineers have developed a veneer clipper for their use which operates with a downward curving motion. This has been described as being somewhat like a scissors action on the veneer passing under the blade. The scissors action gives a clean cut free of splinters.

HOT PLATE PRESS UNLOADER—Company engineers have designed, built and installed an unloading device for the hot plate press which simplifies removal of the completed panels. The device occupies minimum space and has been installed on both of the firm's 20-opening presses.

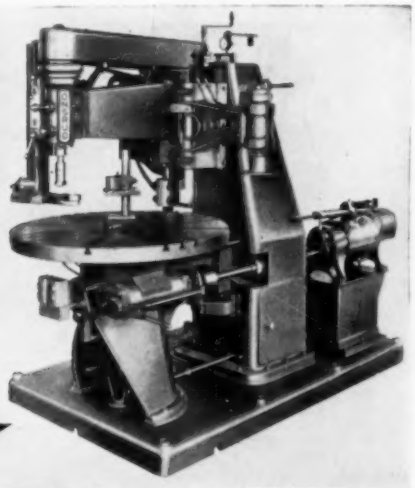
On the loading side of the press are mechanically operated arms which push the completed panels partly out of the press. Then, as the panels rest in that position, three horizontal arms are brought up beneath them. A moving belt on each of the arms provides power to draw each panel completely out of the press.

AUTOMATIC FEED FOR SKINNER SAWS—Only one size of panel is made by the company—standard 4x8 ft. Longer panels up to 65 ft., which form a part of the firm's production, are made by scarfing panels together. The single standard size of panels has made possible an ingenious arrangement in the skinner saw department.

Here an untrimmed panel is moved off the top of the pile by a "nudging" arm. Powered belts move the panel between saws which trim off the two long sides.

Eight feet beyond, the panel's travel direction is changed 90° to the right so that other saws can trim the two

now you can have LOW COST shaping production like this every hour of the day



PIECE	TYPE MACHINE	TYPE TOOLING	PRODUCTION PER HOUR	REMARKS
Chair Leg 1½" x 1½" x 15½"	WA-50-AB	4 station 2 high	960 per hour	no sanding required
Long Curved Handle Brush Block	W-122-B	8 station 2 high	1,440 per hour	two operations in one set-up
18" Diameter Stool Seats	W-28	center clamp form	150 per hour	from square blank, no band sawing
Wood and Plastic Table Tops 42" x 42"	WB-85	center clamp form	240 per hour	shaping and grooving operations at one time
Bed Rail 2" x 2½" x 55"	W-125-B	4 station 2 high	720 per hour	no ripping or tearing out of grain
Coat Hanger ¼" x ⅝" x 15½"	WA-50-AB	4 station 3 high	1,440 per hour	no sanding required

with Onsrud AUTOMATIC SHAPERS

Onsrud automatic shapers give you *constant* high speed production, hour after hour, with smooth, almost-sanded finish and no spoilage. Built in complete size range for shaping work from 2" to 85" diameter. Save time, save money, increase your profits.

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Woodworking Division
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short sides. This direction change is controlled by the panel itself.

As the panel approaches the direction change point it interrupts a light beam. This actuates power rolls moving in the new direction. The forward motion of the panel is halted by a rubber-faced bumper at the instant the side motion takes over.

LATEST MACHINES USED—In addition to the firm's own engineering innovations, Diamond Lumber Co. has made use of many new machines incorporating the ideas of machinery makers. Among these are a variety of patchers which repair veneer knots, splits and checks with patches of both the edge-glued and pressure-tight type. An electronic 8 ft. capacity veneer edge gluer enables the company to make use economically of narrow veneer strips. In the "long panel" department an electronic glue setter is used in completing scarfed joints.

A double-end tenoner machine with an opening up to 16 ft. enables the firm to bevel, shiplap or tongue-and-groove both ends of long panels simultaneously, or to produce Texture 1-11 plywood, or to split a panel and shiplap the edges at one pass.

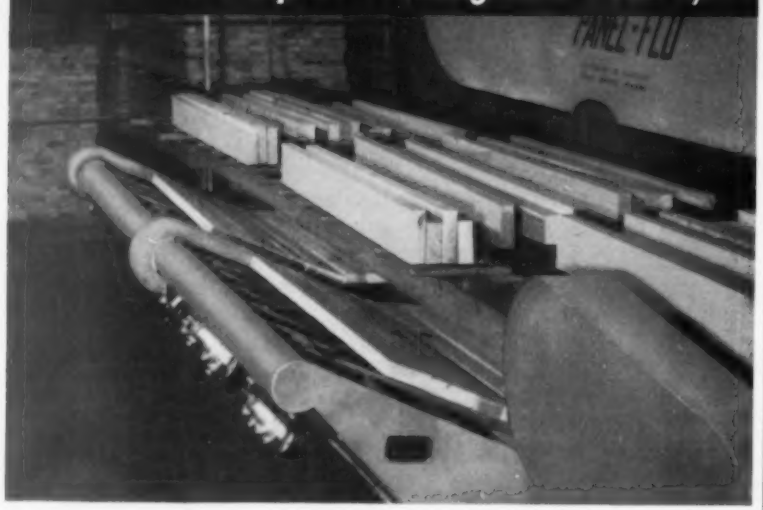
PRODUCTS ARE VARIED — The production of Diamond Lumber Co. encompasses many different panel products. The bulk of its production lies in Douglas fir plywood, both interior and exterior grades, conforming to D.F.P.A. standards.

Some Machines and Equipment Used at Diamond Lumber Co. Plywood Plant:

Lathe, 8 ft. capacity, 84 in. swing, 110 in. knife length; Lathe, 4 ft. capacity, 60 in. swing, 66 in. knife length.....Jackson Industries, Inc.
"Scissors Action" Veneer Clippers.....made under license by Globe Machine Mfg. Co.
22 Section Dryers—6 Trays High.....Moore Dry Kiln Co., Coe Mfg. Co.
2 Steam-Heated 20-Opening Presses.....Columbia Div., Lodge & Shipley Co.
2 Electronic Gluing Machine..Mann-Russell Electronics
2 8-Drum Double Deck Sanders....Salem Machine Co.
16 Ft. Double End Tenoner.....Jenkins Div., Curt G. Joa, Inc.

The Basic-Witz Furniture Industries, Inc. Reports:

TAYLOR PANEL-FLO EDGE GLUES CORE STOCK AT 4,184 FEET PER HOUR — with Rejects Totaling Less Than 1%!



Three reasons account for Basic-Witz Furniture Industries, Inc. attaining this high production figure. *First* . . . the use of 20-ft. steam-heated platens(instead of the standard 15-ft. length) permits faster feed with equal heat transfer for curing the glue. *Second* . . . the ease of operation, inherent in Taylor design, which makes for faster feeding with a minimum of operator fatigue. *Third* . . . Panels are sized automatically with indiscriminate feeding at the PANEL-FLO operator's station.

This is the performance story of the new 20-ft. PANEL-FLO Continuous Edge Gluing Machine, and sizing saw, in operation at the Staunton, Va. plant of Basic-Witz Furniture Industries, Inc. A new 15-ft. standard PANEL-FLO, and sizing saw, is giving comparable service at the company's Waynesboro, Va. plant.

Let us arrange to have you see the PANEL-FLO in operation. Your request will receive prompt attention.

FREE BOOKLET: Write today for your copy of "The Taylor Panel-Flo Continuous Edge Gluing Machine," a booklet which explains the engineering advancements accompanying this new, revolutionary method of Continuous Edge Gluing.

James L. Taylor Mfg. Co.

Edge Gluing Specialists Since 1900

116 PARKER AVE., POUGHKEEPSIE, N. Y.

Hobby Horses

Continued from Page 26

that is laid over the bottom part of the mold. Quickly, he jerks the metal plate out, and the mixture falls into the mold.

The legs of the horse which have been previously shaped from ¾ in. plywood and mounted on a body frame, are inserted. Next, the top part of the body mold is put in place, and filled with the flour and resin mixture. When the complete mold is assembled, it is moved to a hydraulic press and pressure applied.

The mold is kept in the oven 18 minutes. At the end of this time, it is moved by conveyor around the oven and back to the hydraulic press which lifts the lid.

The horse's body is removed and the edges or mold marks are sanded immediately. It is easiest to do this while the body is hot, for it hardens as it cools.

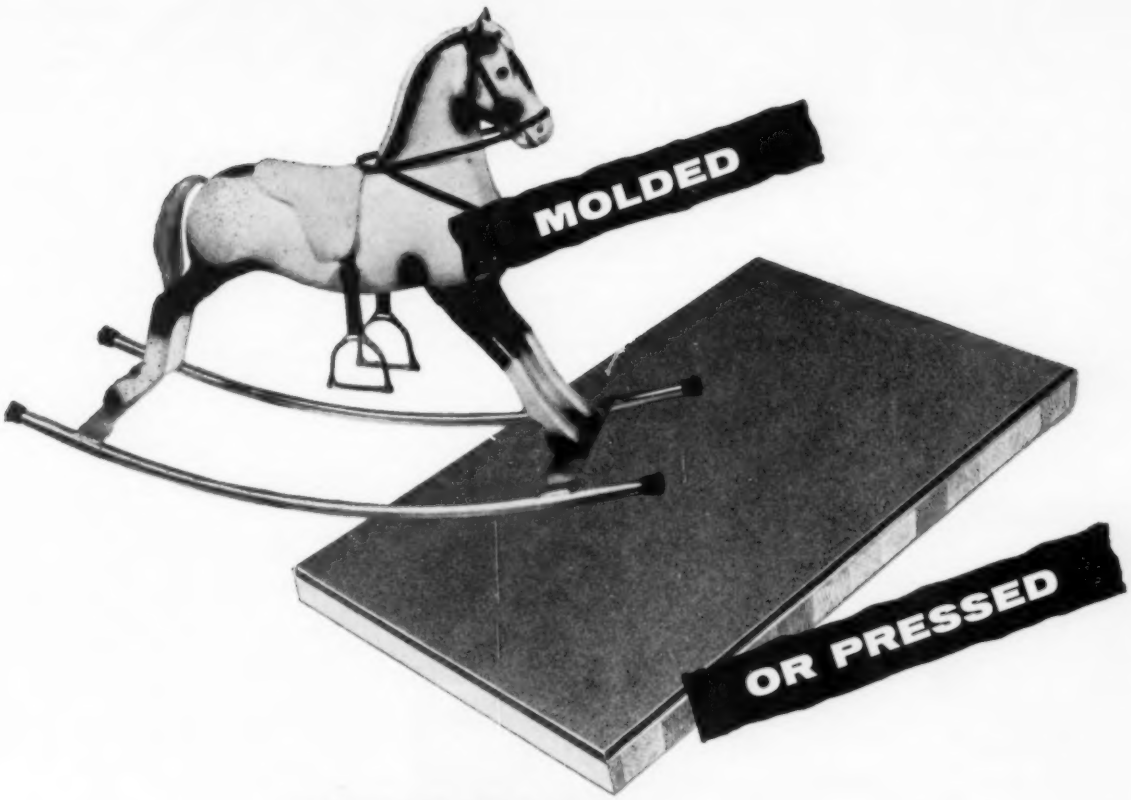
When the body has cooled it is covered with ravon flock to achieve a realistic suede-like finish. The horses come in two colors: palomino and black. Palomino is reported to be the most popular because Roy Rogers and his horse are the current favorites with the small fry.

But whatever the color, the horse is fitted with a genuine horsehair tail, sheepskin mane and glass eyes. All leather accessories are genuine, as is the saddle blanket.

Finally, the finished horse is suspended in a base of metal tubing, and it is ready for market.

Some Machinery, Equipment and Supplies used by DeLuxe Woodcraft Co.:

Resin.....Durez Plastics Div., Hooker Electrochemical Co.
Shaper.....Walker-Turner, Inc.
Table Saw....Delta Power Tool Div., Rockwell Mfg. Co.
Spray Booth.....Binks Mfg. Co.



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Molded articles and pressed board made of wood particles bonded with Durez phenolic resins have opened up profitable new uses for wood material previously wasted.

Particle board can be made with these resins in a variety of densities, strengths, hardnesses, and other mechanical properties, and in various thicknesses. It can be machined or worked readily with ordinary equipment. Toys, household articles, toilet seats, and chair backs and bottoms suggest the broad commercial markets open to compression molded wood products.

Supplied in powdered form, Durez wood-bonding resins offer maximum ease in processing. When cured or solidified they exhibit physical properties that are suitable for these numerous end-products.

If you are inquiring into the profitability of particle wood in your operations, or are already producing it, we can help you. Qualified field experts, backed by our long experience in research and development, are available for consultation.

DUREZ®

Phenolic Resins for the Wood Industry

HOOKER CHEMICALS PLASTICS

DUREZ PLASTICS DIVISION

HOOKER ELECTROCHEMICAL COMPANY
307 WALCK ROAD, NORTH TONAWANDA, N. Y.

Finger Joint Line

Continued from Page 23

ticed by the Nashotah firm, offers possibilities to most manufacturers of wood parts who have more shorts than long lengths available. It presents no painting difficulties and does not detract from the appearance of the finished product.

Furniture manufacturers, for instance, might use finger-jointed stock for back legs of case goods, back chair legs, desk legs and table aprons. Millwork manufacturers might use finger joints in stock for practically any of their manufactured parts except those that might be mortised later for locks.

"Whatever the size of a piece of wood, it pays to save it," explains R. E. Howland, Nashotah executive. "If you save 10 in. it helps to pay the expense of the finger jointing operation and saves lumber which would otherwise be scrapped."

The company buys factory-grade wood, rips it, cuts out the defects, and saves all clears, regardless of length. Any piece up to 9 ft. long is taken for finger jointing. The bonding machine with its high-frequency generator can handle lengths up to 10 ft.

Both ends of all usable short lengths are first fed to a machine which cuts the fingers. The stock is then moved to the automatic finger joint bonding line. Air-operated automatic controls permit one man to operate the entire line.

The operator fits the fingers of one end of the stock onto a special metal glue applicator which is grooved to the exact contour of the fingers. He then places the stock on the track of the bonding line, fitting the glued fingers into the unglued fingers of the piece preceding it.

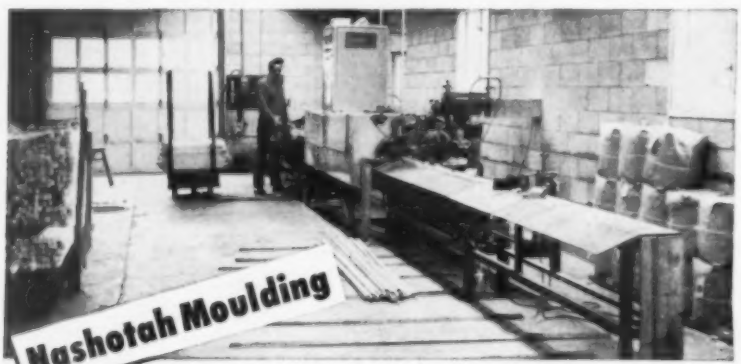
At the touch of a button, the stock is moved into the press, and the glue applicator dips automatically and simultaneously into the pot of glue directly beneath it, then returns to position ready to apply glue to the next piece.

When the stock emerges from the other end of the press, it is sufficiently set to withstand bending by hand. As it emerges, a pre-set automatic, air-operated cutoff saw advances and sizes a piece. Then air-operated arms automatically come forth at right angles and push the stock off the conveyor and onto a stack at the side.

When a sufficient load is accumulated, the finger-jointed stock is picked up and moved to another room to be processed through one of the company's moulders.

Some Machines and Equipment Used by Nashotah Moulding & Mfg. Co.:

Finger Joint Cutter, Moulders ..... Yates-American Machine Co.
High-Frequency Generator ..... Reeve Electronics, Inc.
Automatic Finger Joint Bonding Machine ..... Union Tool Corp.
Radial Cutoff Saw ..... Skil Corp.
Air Control Devices ..... Bellows Co.



...turns scrap to profit with UNION Automatic Finger-Joint Bonding Line

"Worth its cost alone in utilizing short cuttings for improvement of lengths!" This is what R. E. Howland, Jr., sales manager for Nashotah Moulding & Manufacturing Company, has to say about the new Union Automatic Finger-Joint Bonding Line.

Little wonder Nashotah Moulding has found the Union Bonding Line so profitable . . . for it permits the only economical way to reclaim short lengths—the only way to recover money already invested in lumber, machining and handling! In fact, Nashotah Moulding on many patterns *has eliminated the 15% premium usually associated with specified lengths,* thus creating new demand, new sales for these lengths.

The Union Automatic Finger-Joint Bonding Line features one-man operation throughout . . . a *big* savings in production costs! The line includes an infeed table with rubberized belt conveyor and hold-down stock wheels, with hold-down and side pressure rolls accurately aligning the stock at all times. Adjustable feed rolls assure tightest joints through entire curing cycle.

Union's high frequency press, available as part of the bonding line, offers the ultimate in high frequency bonding . . . for fastest production and highest quality workmanship. Adjustable platens permit varying widths of material. Top pressure shoes are adjustable for varying thicknesses. Ideal for continuous bonding of finger, tongue-and-groove, flat and other type joints.

The line also includes a gauging and saw table mounting an automatic cut-off saw, adjustable for any desired length of cut. Automatic pusher arms remove cut-off pieces from table.

The Union Automatic Finger-Joint Bonding Line has proved itself one of the most versatile and profitable woodworking arrangements of its kind, lending itself to a wide variety of woodworking operations. Write today for complete details and proposal. See for yourself how this popular bonding line can cut *your* costs . . . boost your profits.

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WARSAW, INDIANA

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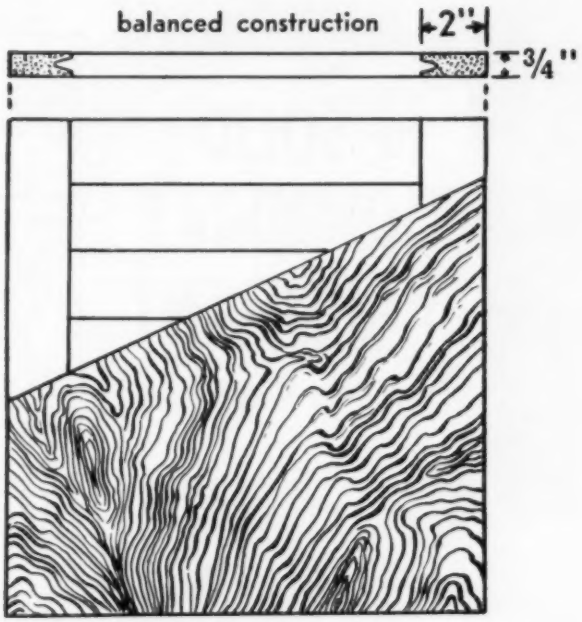
BLANKET INSULATION

An insulating blanket is a fibrous insulating material preformed or assembled to provide a definite thickness and width and available in long lengths. Blankets are usually provided with edges especially formed to effect continuous attachment in order to maintain its position as installed.

One large user says,

"We can't understand it–we just never have to replace doors anymore"



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GUARANTEED NON-WARPING CABINET DOOR

The "JAMESTOWNER" has proven so successful that more and more warehouses are stocking it as a great *trouble-free* item.

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Quality Hardwood
PLYWOOD

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TWO POPULAR SIZES

#1 2¼" Top Diameter with or without solid brass ferrules

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- Qualifies for Mahogany Association Tags.
- Unfinished, or Authentically Furniture-finished in blond or contemporary dark mahogany.
- With or without hardware
- Attach with our Clinch Nut Plates #7 Sq., flat 4c ea. #7A Sq., 10° 5c ea. #20 Tri., Flat 6c ea. #10 Tri., 10° 6c ea. #15 Tri., 15° 6c ea.

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"We lead, others follow"

PATENT DIGEST

Loggers Combine

Robert R. Edgar (to Kimberly-Clark Corp.). U. S. 2,741,373, April 10, 1956. In a tractor mounted hoisting device, an improved means for detachably securing the forward end of the frame structure, whereby said frame structure may swing relative to the tractor about the longitudinal axis of said frame.

Dinette Constructions

Roy Eucker. U. S. 2,741,804, April 10, 1956. A partition dividing an interior space with an extensible dinette construction on one of said structures, and an extensible seat including frame on other side.

Reciprocative, Double Sash, Gang Sawmill

Alvin Woodruff. U. S. 2,740,436, April 3, 1956. A reciprocative, double sash, gang sawmill, comprising a supporting framework; two saw-sashes disposed for vertical reciprocation within said supporting framework and along respective parallel planes which are spaced apart and aligned longitudinally of the sawmill, so as to simultaneously operate on the same work.

Clamping Device for Guide Fence

William H. Odlum (to Duro Metal Products Co.). U. S. 2,740,437. A releasable clamping device for a fence or the like of a power tool, said device comprising a rod, a fixed support on the power tool for the rod, a sleeve mounted for axial sliding movement on the rod and adapted to be secured to said fence.

Saw Chain with Saw Bar Groove Cleaning Means

Joseph B. Cox (to Oregon Saw Chain Corp.). U. S. 2,741,280, April 10, 1956. In a saw chain link, an improvement comprising a plurality of cutting elements on end surface of root portion.

Saw Sharpener

James McEwan. U. S. 2,741,143, April 10, 1956. In a saw sharpener, a support structure including a guide means having respective parallel guide surfaces, a file carriage supported by said guide means and having a pair of spaced guide bearings engaging one of said guide surfaces.

Automatic Lubricator for Power Driven Chain Saw

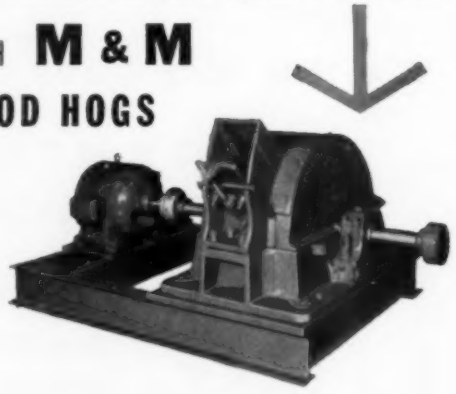
Henry E. Warren (to Lombard Governor Corp.). U. S. 2,741,276, April 10, 1956. In a portable powered chain saw, a central bore in the drive shaft from one end to the sprocket with a communicating passage to the periphery of the latter.

Automatic Sawing Machine for Cutting Panels

Delmas L. Leger (to Panel Master Co.). U. S. 2,741,277, April 10, 1956. A sawing machine for cutting a panel of plywood or the like while it is supported in an upright position.

CONVERT WASTE INTO USABLE MATERIAL

WITH M & M WOOD HOGS



When reduced in M & M Wood Hogs, timber and lumber scraps become profitable. M & M Sawmill Hogs reduce scrap such as slabs and edgings to a size usable as fuel chips. M & M Hogs grind miscellaneous blocks, shavings, and other scrap to wood chips excellent as livestock litter and other sawdust products. They also grind stumps for turpentine extraction and will reduce bark and plywood waste in the wet or dry state. Available in many sizes . . . write for catalog giving full information.

MITTS & MERRILL

93 1018 South Water Street • SAGINAW, MICHIGAN

Back Plate with End Dogs for Log-Ripping Saw

Robert H. McMurtrie. U. S. 2,741,278, April 10, 1956. In combination with a bandsaw of the upright vertical frame type, a vertically running blade, a back plate attachment positioned adjacent to said bandsaw frame.

Method for Making Composition Board

Henry C. L. Miller and Roy H. Sides (to Miller Hofft, Inc.). U. S. 2,740,990, April 10, 1956. A method of making composition board comprising: continuously forming an incoherent mixture of wood chips sized to pass a four mesh screen and be retained on a substantially 16 mesh screen with a thermosetting binder.

Saw Set

Ludwig Seitz (to Maschenenfabric A. G.). U. S. 2,741,933, April 10, 1956. A saw set comprising in combination an elongated platform supported in horizontal position by a series of standards, two standards being positioned at ends of platform, one intermediate, actuate wing arms being secured to one end of platform to overlie one of said standards.

Window Construction

Joseph J. Klee. U. S. 2,742,676, April 24, 1956. An awning type window construction with means for swinging sashes from a vertical closed position to an angular opened position of at least 60 degrees.

Tracking Mechanism for Belt Sander

Lars Frostad (to Porter-Cable Machine Co.). U. S. 2,742,741, April 24, 1956. A portable belt sanding machine comprising a frame having a vertical side wall, top and bottom walls, and an abrasive belt driving pulley journalled for rotation in the side wall at the rear end of the frame.

Moisture Indicating Apparatus

Richard S. Feigal and Jerry Hagen (to Minneapolis-Honeywell Regulator Co.). In combination; an electrical power source, switching means; indicating means; a plurality of moisture responsive means arranged to be responsive to moisture in the air.

Circular Saw Grinding Fixture

Arthur Olier (one-half to Irvin S. Crowell). U. S. 2,742,799, April 24, 1956. In combination with a bench saw in a table with a slot therein, an arbor mounted beneath the table having a slit there through, and a means of engaging edges of table to limit movement of fixture during saw sharpening operation.

Kick-Off Mechanism for Sawing Machines

Foster Southworth Acton. U. S. 2,742,935, April 24, 1956. In a sawing machine, a kick-off member adjacent the support located beyond the saw in the direction of the path of travel of material through the machine and movable into the path of travel of material.

Folding Stairs

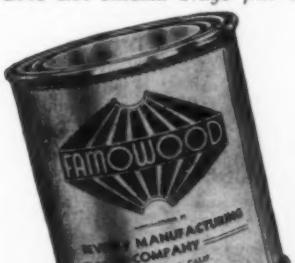
George Mattis and Stanley Rapp (to Mattis). U. S. 2,743,861. Improved folding stairs adapted for mounting within a shallow rectangular recess in a vertical wall.

FAMOWOOD . . . *the AMAZING*

ALL-PURPOSE PLASTIC for wood finishes!

Applies like putty . . . Sticks like glue!

FAMOWOOD is the answer . . . where wood finishes are important. Simple to use . . . efficient, lasting, time-saving, when filling wood cracks, gouges, nail and screw holes or correcting defects. Dries quickly, does not shrink. *Stays put* under adverse conditions.



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Weldwood® FLEXIBLE Wood-Trim*

- No nails! No heat! No ironing! No sawing!
- So flexible, it fits right around corners or formed curves – yet will not chip, split or peel. You could even wrap it around a pencil.
- Can be lightly sanded, then stained or finished the same way as the plywood face. Use your favorite wood working glue. When using Weldwood Contact Cement or Weldwood Presto-Set® Glue, no clamps or heat are required . . . just spread the glue and apply the Trim. It's as easy as that!

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— including oak, walnut, fir, birch, sonora, African mahogany, Philippine mahogany.
Size: 1" and 1½" wide, 200' to a box in 8 ft. strips

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UNITED STATES PLYWOOD CORPORATION
Dept. WP-7, 55 West 44th Street, New York 36, N. Y.

Please send me sample and full information on Weldwood Flexible Wood-Trim.

NAME

ADDRESS

CITY STATE

Church Furniture

Continued from Page 29

Wood & Wood Products, Sept. 1955, page 34)

New machines which are speeding production in the mill room include a shaper used to fashion pew ends, a new conveyorized cutoff saw and an air-lift 8 in. moulder. The latter is hopper fed and capable of processing 180 ft. per hour.

"This moulder has helped us beyond all expectations," says the plant superintendent. "Pew backs, for instance, which formerly required 15 minutes on a hand block machine are now processed in a minute and a half. Not only is the machine a great time saver, but the quality of the work is improved 100%."

In the Panel Department, the company is proud of the two straight line ripsaws recently installed and used to rip core stock. Veneer is bought outside. A new hot press, ply glue spreader and core stock glue spreader are as conveyorized as the company can make them. Core stock passes over the automatic conveyorized glue applicator from one direction, as cross plies are fed through a glue spreader from the other direction. Coming together at the bed of the hot press, the operator can make up his sandwich without moving more than a few steps in any direction.

The speed-up in production extends to the finishing department, too. Here may be found an overhead conveyor which is said to have made the spraying operation six times faster. The conveyor holds small pieces, carrying them to the spray booth, lowering them to eye level of the operator for spraying, then elevating them again and carrying them around the room for drying.

The company is enthusiastic about the hot lacquer spray being used presently to finish most pieces. It is estimated that hot spray has cut the lacquer operation in half.

"It's a superior method because it dries quickly and is more durable," the superintendent explains. "We use 34% solid lacquer which renders a tougher coat and quicker drying. We put it on thick, and it gives a better build. One hot spray equals two cold ones."

The company's most popular pew nowadays is upholstered foam rubber. In the upholstery department, strips of foam rubber are cut from 3 to 5 in. wide—as specified. In the next operation, the foam rubber is placed on the reverse side of upholstered fabric laid out on a table. A board of identical width and length is placed on top of the rubber strip. When the assembly is in place, the operator touches a button and rods, attached to and powered by air cylinders, press down on the boards, depressing the foam rubber. It is held thus while the operator, using air-operated fasteners, tacks the upholstery fabric to the back of the board.

At the next operation, the upholstered strips are combined parallel and attached to pew bottoms and backs.

Some Machinery, Equipment and Supplies Used by Endicott Church Furniture Co.

Moulder, Cutoff Saws and Ripsaws.....G. M. Diehl Machine Works
Double Belt Stroke Sander and Serrated Belt Sander.....Curtis Machine Corp.
Hot Plate Press.....Bertheisen Engineering Works
Conveyorized Glue Applicators.....Union Tool Corp.
Belt Sander.....Wysong & Miles
Shaper.....Oliver Machinery Co.
Staplers.....Fastener Corp.
Hot Spray Finishing System.....DeVilbiss Co.
Power Screw Drivers.....Thor Corp.

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NEW!

AUTO-NAILER

Write for details of new Hercules-9 and line of nailers to fit all needs

AUTO-NAILER COMPANY
267 MARIETTA STREET, N.W., ATLANTA 13, GEORGIA

Looking for Help —or a New Job?

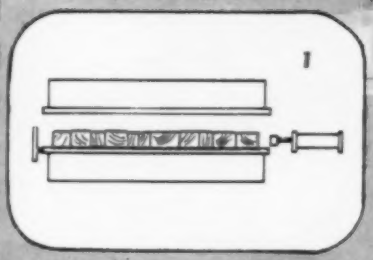
You reach the right people in the right places—get best results—when you advertise in the

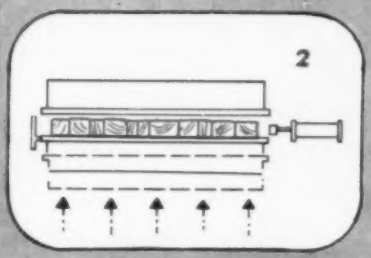
WOOD & WOOD PRODUCTS TRADING POST

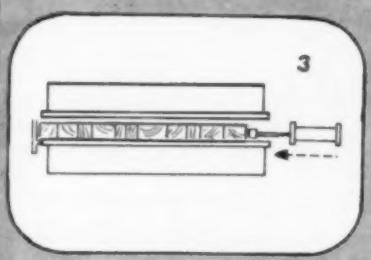
See Page 84

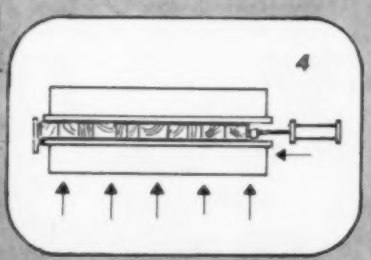
Starring the

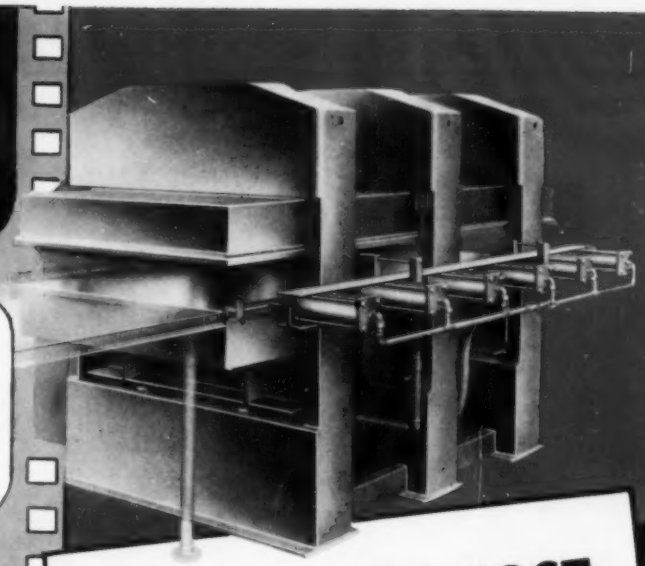
BERTHELSEN PRESS











NOW...LOW COST EDGE GLUING OF CORE STOCK—

Utilizing exclusive Berthelsen side pressure attachments on either a single or double opening Berthelsen Press provides manufacturers with a low cost batch-type edge gluing machine.

Diagrams at left illustrate operation of the press as follows:

1. Press loaded with random or gang ripped core stock with coated glue line edges.
2. Curing cycle starts. Platens quickly close to a pre-set position to prevent stock from buckling (if [illegible] is not yet applied).
3. Side pressure [illegible] by controlled horizontal [illegible] pressure [illegible] the precise moment [illegible] position is reached.
4. Press completely closed. Application of controlled [illegible] and horizontal pressure fully coordinated to effect glue cure.

Production averages up to 5000 sq. ft. per 8 hr. shift per opening. Operating cost is low, maintenance of the equipment is simple. Moderately priced, this Berthelsen Press is within reach of the smallest manufacturer. Write today for full details.

BERTHELSEN PRESSES

P. O. Box 1423 Lockport Road

Joliet, Illinois

NAMES and EVENTS

INDUSTRY NEWS

A highlight of the N.L.M.A. spring meeting was the award of a West Coast Tree Farm certificate to Walter B. Nettleton, Washington lumberman and past president of the association

N.L.M.A. Directors Meeting. Among the several resolutions approved by the 59 directors of National Lumber Mfrs. Assn. at their recent meeting in Seattle, was a call for Congress to act on a re-appraisal of government land ownership and more detailed reporting of national forest management activities.

Other resolutions involved expanding N.L.M.A.'s research activities, congratulating the U. S. Chamber of Commerce for work in modernizing building codes, and applauding the National Paint, Varnish, and Lacquer Assn. for cooperating in its program to improve paint performance on wood. Two new research projects, to be undertaken at N.L.M.A.'s research affiliate, Timber Engineering Co., Washington, D. C., are a study of condensation problems due to home air conditioning, and development of improved practices for unit packaging, shipping, handling, and storage of lumber and lumber products.

Admiring the plaque given to Judd Greenman, for outstanding service as N.L.M.A. president during 1955, are, l. to r.: N. B. Giustina, president of West Coast Lumbermen's Assn.; Executive Vice-President Leo V. Bodine; President Lawrence D. Kellogg; and Director G. E. Karlen

N.A.F.M. Annual Convention. Three of the opening day speakers at the National Assn. of Furniture Manufacturers annual convention, Aug. 26-30, at the Conrad Hilton Hotel, Chicago, have announced their subjects. Pierre Martineau, research director of the Chicago Tribune, will speak on "The Changing American Consumer"; Max Shore, national sales manager of Elmer I. Klein Co., will talk on "Motivating Salesmen"; and Martin R. Gainsbrugh, chief economist of National Industrial Conference Board, will discuss "Current Business Trends".

At the association's Supply, Equipment, and Fabric Fair also held in the hotel, many industry suppliers have announced that they will be launching newly developed products and processes aimed at helping the furniture manufacturer to make big strides toward automation.

Wood Preservers Elect. T. P. Weir, Jr., Wood-Protection Co., Houston, was elected president of Vacuum Wood Preservers Institute at its recent meeting in Madison, Wis. J. M. Reichenstein, Jr., Cowser Co., Dallas, is secretary, Herbert Jordan, Jordan Lumber Co., Memphis, and Joe Gauthier, Cowser Co., are vice-presidents.

T. P. Wier, Jr.

DIXIE dust control turns plant-waste into fuel...

at NATIONAL STORE FIXTURES CO.

Longer life for machinery, cleaner working conditions, *plus* up to 33% savings on fuel costs . . . that's what you get with a DIXIE Dust Control System. Shown below is part of the complete DIXIE installation at National Store Fixtures in Odenton, Md. Waste material is drawn from the plant to these cyclone collectors, carried to storage, then fed to the boilers as needed through the boiler-feed collector in the background.

DIXIE can supply a money-saving solution to your dust-control problem, too. Whether you're looking for advice on a complete new system, or merely wish to improve or expand your present one, talk with the DIXIE engineer in your area. He'll be happy to discuss your problems with you without obligation; and to show you in concrete terms how proper dust-control planning *now* will pay big dividends far into the future.

DIXIE MANUFACTURING CO. INCORPORATED BALTIMORE, MD.

DIXIE Manufacturing Co.
1514 W. Patapsco Ave.
Baltimore 30, Md.

Extra durable bonds with

LAUXITE* 326

Monsanto's one-package melamine-urea adhesive upgrades skins and doors with outstanding dry strength and high water-resistance!

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*LAUXITE: REG. U. S. PAT. OFF.

Lauxite 326 is specially formulated by Monsanto for hot press gluing of exterior work. This dustless, water-soluble powder assures a lasting bond with a high degree of water-resistance

It is easy to prepare—add only water. Its working life is at least 72 hours at 75°F. Its cure time is fast. It has little formaldehyde odor. Its coverage is high—25-35 pounds for 1,000-square feet of single glue line.

The superior washability of Lauxite 326 makes equipment cleaning easy. Its light-color glue lines help to eliminate staining problems on thin veneers.

Let us tell you how Lauxite 326 can be economically formulated to satisfy your extreme and intermediate durability requirements. Write today for test samples and data sheets. Monsanto Chemical Company, Plastics Division, Room 1137, Springfield 2, Massachusetts, or 911 Western Avenue, Seattle, Washington.

During the conference, members discussed methods and cost of treatments, advertising markets and the future of the industry. They also approved specifications for vacuum treating wood used in buildings.

Ralph L. Smith Lumber Co., Anderson, Calif., has purchased the Mount Shasta Pine Mfg. Co., Mount Shasta, Calif., which will be operated as the Mount Shasta Division of Smith. The plant has been supervised in recent years for its owner, president and manager, Harry L. Benton, by Robert Kohn, assistant manager, who will continue as resident manager for Smith. No other changes are contemplated.

Discussing their projected study of particle board, of which one report on flakeboard will be completed soon, are James Love, at left, president of Love Wood Products, Diboll, Texas, an affiliate of Southern Pine Lumber Co., and Dr. Bohuslav E. Mikulka, wood utilization expert brought from Europe to guide technical studies for Love Wood Products

NEWMAN S-824
SINGLE SURFACER

Designed for Your Profit

Will plane 24" wide, 8" thick.

100% ball bearing.

Power hoist to raise and lower table. No more back-breaking cranking.

Rigid one piece table raised on staggered screws in ball thrust bearings for maximum support.

Removable flame hardened center bed plate.

Chipbreaker and pressure bar concentric with cutterhead for excellence of finish.

Sectional front roll and sectional chipbreaker.

All rolls power driven through variable drive giving any rate of feed between 20 and 70 lineal feet per minute.

7½ H. P. totally enclosed fan cooled motor direct connected to 4-knife dynetrically balanced cylinder.

$2,235.00 F. O. B. Greensboro, N. C. This unusually low price is an introductory offer for a limited time only.

Knife grinder and jointer with self reversing screws at reasonable additional cost.

Delivery from stock subject to prior sale. *Write for descriptive literature and full quotation.*

NEWMAN
MACHINE CO., INC.
Greensboro, N. C.

Above are President Earl Thuresson and second Vice-President Carey Watkins, both newly elected officers of National Plywood Distributors Assn. Below, first Vice-President Albert Hirsch congratulates Managing Director Charles Devlin upon winning the association's Scroll of Honor

Plywood Distributors Meet. Careful examination of the health of plywood distribution underlined most the sessions of the 14th annual convention of National Plywood Distributors Assn. in Colorado recently. In the elections, Earl G. Thuresson, Associated Door & Plywood Co., Chicago, was named president; Albert Hersh, Industrial Plywood Co., Inc., Jamaica, L. I., N. Y., moved up to first vice-president; and Carey A. Watkins, Gulf States Plywood Co., Jacksonville, Fla., was chosen second vice-president.

The following new directors were elected, in addition to hold-over directors: Fred Smales, U. S. Plywood Corp., Los Angeles; John Goetz, Atlas Plywood Corp., Trenton, N. J.; Theodore Merrill, Interstate Lumbermen's Supply Co., Newark, N. J.; Jack K. Fiddes, Fiddes-Moore & Co., Franklin Park, Ill.; Ben Johnson, Gulf States Plywood Co., New Orleans; and Dean Trumbo, M. Trumbo, Inc., Portland, Ore.

Some of the members who attended the recent two-day meeting of National Institute of Wood Kitchen Cabinets are, seated l. to r.: Manager Fred Montiegel; M. R. Liebenthal, Superior Cabinet Co., Detroit; President Richard C. Chapman, Mutschler Bros. Co., Nappanee, Ind.; E. C. Hawkinson, Brammer Mfg. Co., Davenport, Iowa. Standing are Lyle L. Sodeman, Curtis Cos. Inc., Clinton, Iowa; and Fred Hansell of Brammer

Kitchen Cabinet Group Meets. A stepped-up program of marketing and engineering activities is anticipated

Now Dot brings you

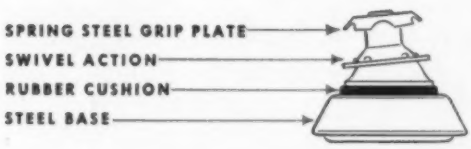
SUPER SILENT GLIDES

in a distinguished new style

The graceful new conical configuration of United-Carr's well-known super silent glide is perfectly adapted to the clean-cut styling of modern tubular furniture. *Practical* . . . it provides a maximum of flat, smooth under-surface for the protection of floors and carpets. *Distinctive* . . . it is available in nickel or brass finish to match or to complement the furniture with which it is used.

See us at **BOOTH 9,**
NAFM FAIR, August 26-30.

Also available with familiar rounded base.



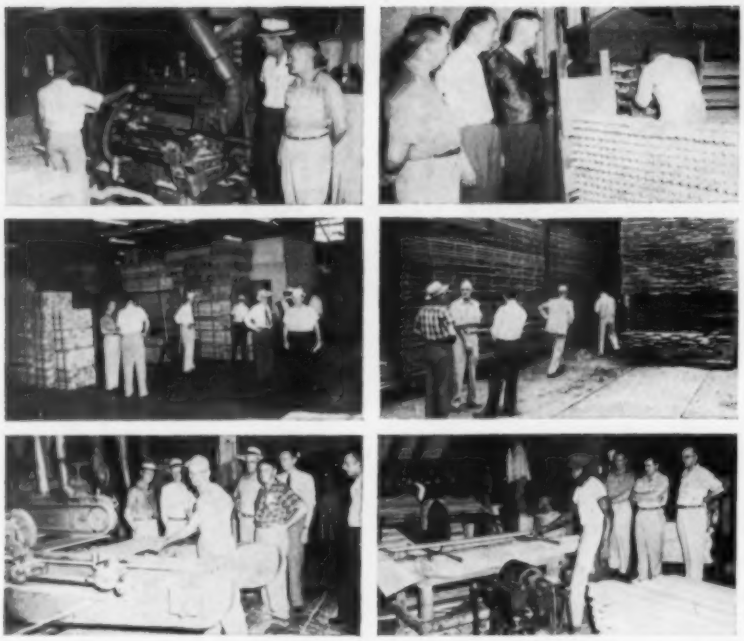
FLOATS on rubber, SLIDES on steel
Hardened (or stainless) steel base is insulated from other metal parts by rubber cushion. All noise-making vibrations are absorbed by cushion. New design also ensures minimum exposure of rubber.

TILTS, SWIVELS, LOCKS in tight
Tilting swivel base allows new glide to stand flat on floor or carpet even though legs are mounted at angle. Spring steel grip plate is easily driven into tubing but prevents removal of glide. Available in sizes to fit standard tubing.

UNITED-CARR FASTENER CORP.

31 Ames Street, Cambridge 42, Mass.

MAKERS OF DOT FASTENERS



MEMBERS OF HARDWOOD DIMENSION MANUFACTURERS ASSN., continuing their program of free exchange of production techniques, recently toured three member plants in the South. Above, in the first three pictures, l. to r., they are at Hillyer, Deutsch, Edwards, Inc., Oakdale, La., watching a turning lathe, next an automatic sander, and then viewing the shipping room. In second row right is shown the lumber yard of Angelina Hardwood Sales Co., Lufkin, Texas; and in the bottom row, at Temple Precision Wood Parts, Pineland, Texas, they are inspecting a double end tenoner and at right the glue room

by the National Institute of Wood Kitchen Cabinets after its recent meeting in Washington, D. C., during which committee structures were reorganized.

The General Engineering Committee supersedes the former Technical Committee, with E. C. Hawkinson as chairman. Its two subcommittees are on Dimensions and Standards, headed by Anthony Joachimopoulos and Lyle Sodeman. Hugh Gregg heads the Marketing Committee, formerly the Research Committee.

NOTES ABOUT SUPPLIERS

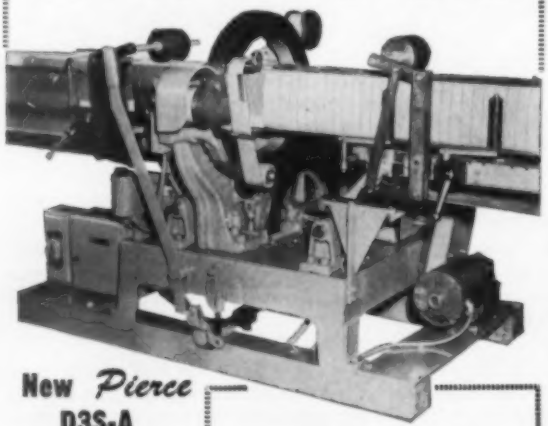
Chapman Chemical Co., Memphis, Tenn., has moved its executive and sales offices into a new building at 60 N. Third St., which affords greatly enlarged quarters. The company is also enlarging and remodeling its research laboratories.

U. S. Plywood Corp., New York, has consolidated its Weldwood Chalkboard operation with its Flexible Materials Division, with all activities now centered in the headquarters of the Division in Louisville, Ky.

The Stanley Works, New Britain, Conn., has started construction of a new manufacturing plant designed to double its production of steel strapping. The 180 x 550 ft. building will be joined by an office building, 300 x 150 ft. and all steel strapping production will be concentrated in the new

AUTOMATE YOUR PACKAGING

Lumber • Flooring • Moulding • Slats • Sash • Trim



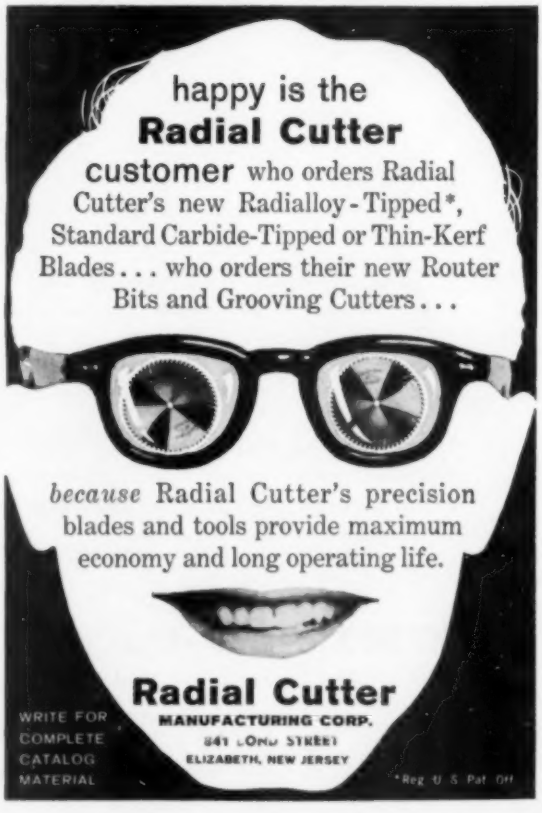
New *Pierce*
D3S-A
LUMBER
WRAPPER

- Automatically makes a tight, continuous spiral paper wrap—each layer firmly glued to preceding wrap.
- Automatically wraps up to 40 feet per minute.
- New 2 hp variable speed drive—to use maximum paper strength.
- Flat belt feed-in length increased to 46"—for more positive feed to light packages.
- New steel-plate guides with rollers reduce twisting of short packages.
- New automatic hold-down roller and size control adjustment.
- 1/3 hp electric push-button machine adjustment control optional (shown).

Write or Wire for full details

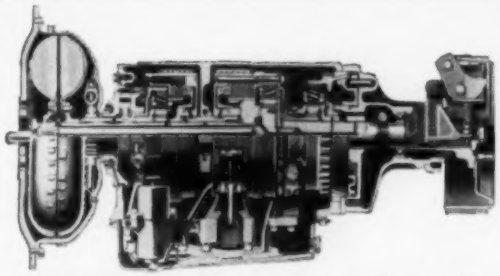
PIERCE WRAPPING MACHINE CO.

1100 E. 31st Street
La Grange Park, Ill.

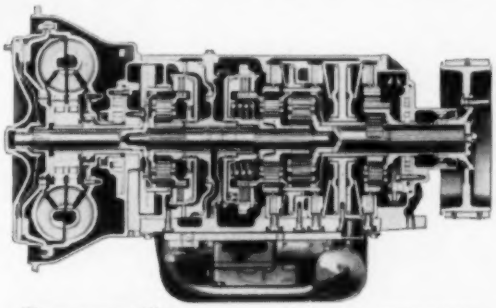

happy is the
Radial Cutter
customer who orders Radial Cutter's new Radialloy-Tipped*, Standard Carbide-Tipped or Thin-Kerf Blades . . . who orders their new Router Bits and Grooving Cutters . . .
because Radial Cutter's precision blades and tools provide maximum economy and long operating life.
Radial Cutter
MANUFACTURING CORP.
841 LONG STREET
ELIZABETH, NEW JERSEY
WRITE FOR COMPLETE CATALOG MATERIAL
*Reg. U. S. Pat. Off.

Now there's a great automatic transmission for whichever Chevy truck you choose

Famous Chevrolet *Hydra-Matic*, or all-new *Powermatic*, provides easy, safe automatic driving that's tailored for your truck!



Hydra-Matic—optional in Series 3000 and 4000 models at extra cost—brings new ease to tough jobs, cuts hauling time and maintenance expense.



Powermatic—optional in Series 5000-10000 models at extra cost—assures the easiest, safest big-truck operation ever known! It's a Chevrolet "first."

Pick *any* Chevrolet truck . . . and you'll find there's a modern automatic transmission to make your hauling easier, safer, and more profitable!

If your choice is a Series 3000 or 4000 model, there's ***Hydra-Matic.*** This modern automatic transmission not only gives you the ease of no-shift hauling . . . it also *saves you maintenance money* because the hydraulic coupling protects drive-line parts from shock loads. Or, if your job calls for a 5000 through 10000 Series Chevy, there's exclusive ***Powermatic***—the first automatic transmission designed especially for big trucks! Six fully automatic forward speeds and a torque converter virtually eliminate manual gear shifting on hills or in traffic! A revolutionary "retarder" assures safer down-hill hauling, less brake wear and you make better time through traffic because all shifts are "power-on" shifts!

Now *automatic driving*, available throughout the Chevrolet truck line, gives you one more reason to see your Chevy dealer soon! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

Chevrolet truck manual transmissions are great performers, too!

To give you extra pulling power in the medium- or heavy-duty model you select, Chevrolet trucks provide big, rugged heavy-duty 4-speed Synchro-Mesh transmissions, or brand-new "New Process" 5-speed transmissions!*

**Optional at extra cost in 5000-6000 through 8000 Series models, standard in 9000-10000 Series models.*

CHEVROLET

NEW CHEVROLET TASK·FORCE TRUCKS

Anything less is an old-fashioned truck!

plant, along with steel strapping tools. Stanley will also expand its steel manufacturing to provide for the additional volume of steel strapping.

R. F. Onsrud

Onsrud Machine Works, Inc., Niles, Ill., has elected officers and directors for the coming year. R. F. Onsrud was re-elected president, and others re-elected were Frank H. Lamson-Scribner, assistant to the president, C. F. Jacobson, vice-president, and Miss H. R. Krabol, treasurer.

New officers are Albert L. Breuer, vice-president in charge of machine tools sales; Robert M. Miller, vice-president in charge of woodworking machinery sales; Earl Pankonin, vice-president in charge of engineering; John F. Andrews, comptroller; G. M. Campbell, executive vice-president; and John M. Wilken, secretary.

Berthelsen Engineering Works, Joliet, Illinois, presented a "Forum on Modern Gluing Techniques" in cooperation with their southeastern representatives, the Garrison Machinery Co., Statesville, N. C., to men from furniture manufacturing plants in the North Carolina area recently at Hickory, N. C. An illustrated lecture was presented by E. F. Steck, vice-president of Berthelsen, on production techniques for the manufacture of lumber core panels, thin plywood skins, panel-on-frame assemblies, and particle board.

Other speakers at the meeting were K. I. Winther, president of Berthelsen, and Robert C. Garrison, president of the Garrison Machinery Co. The 80 man group also visited the Century Furniture Co. plant in Hickory to see various gluing operations.

Shown above are representatives of southern furniture manufacturers who attended a "Forum on Modern Gluing Techniques" sponsored by Berthelsen Engineering Works, Joliet, Ill., and its southeastern representative, Garrison Machinery Co., Statesville, N. C.

Atlas Plywood Corp., Boston, has purchased more than 90% of the stock of Plywood, Inc., Klamath Falls, Ore., and is at present integrating the operations of the new plant with its own. R. A. Matott has been appointed manager of the joined units at Klamath Falls.

Ekstrom, Carlson & Co., Rockford, Ill., has announced its purchase of the Marion Model M ripsaw from the Marion Machine Foundry & Supply Co., Marion, Ind. The acquisition includes manufacturing rights, patterns, tools, jigs, and inventory.

PERSONNEL CHANGES

T. J. Clark

T. J. Clark has been appointed Northwest Division Manager for Atkins Saw Div., Borg - Warner Corp., Indianapolis. His headquarters will be in the Portland, Ore., branch office and warehouse where he will supervise sales and shipments in the area.

Eldon Brewster has been named assistant comptroller of Auto-Nailer Co., Atlanta, Ga., from his former position as general accountant. Another announced promotion was of **Frank D. Nelms** from chief clerk in the sales department to sales coordinator.

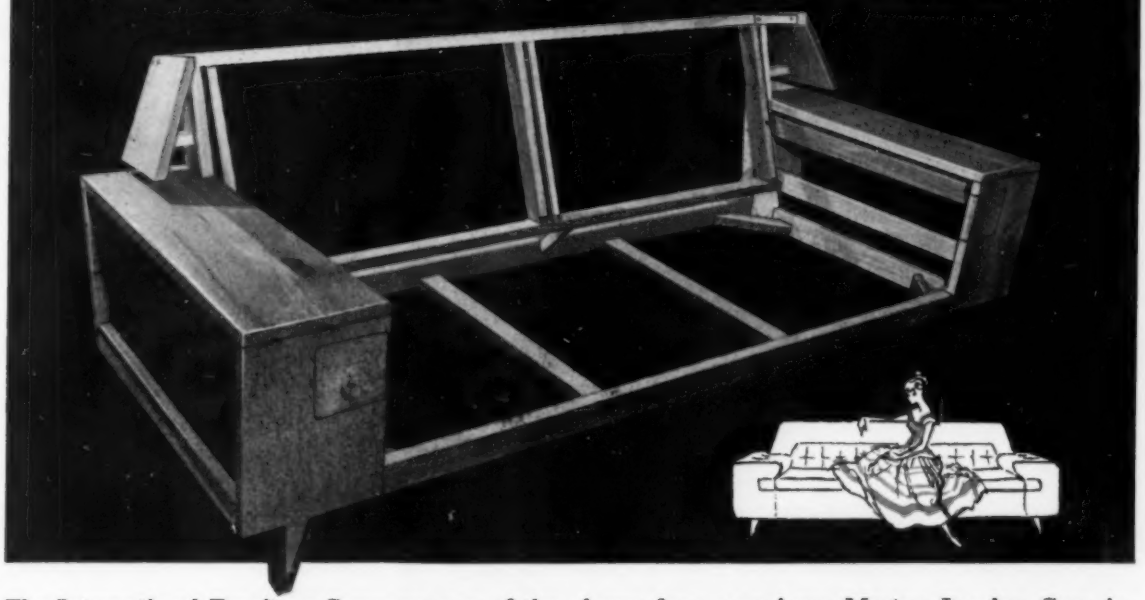
Gustave Barshefsky, formerly secretary of Elmendorf Research, Inc., Chicago, has joined Celotex Corp., Chicago, as head of its Fiber Research Group.

Robert S. Grimmett has been named Houston, Texas, district sales manager for Rockwell Mfg. Co.'s Delta Power

Another Mill to Serve You
Mount Shasta Pine Manufacturing Co.
has now become the
Mt. Shasta Division of the
RALPH L. SMITH LUMBER CO.
Their High Elevation Sugar Pine, Ponderosa Pine and High Quality Shasta Fir, added to our Wildwood and Anderson Production, places us in a splendid position to expand our Mixed Car Service to you.
OUR COMBINED ANNUAL PRODUCTION
150 MILLION BOARD FEET
The Ralph L.
SMITH
Lumber Company
WPA
Mills at Anderson, Red Bluff, Castella, Wildwood, and Mt. Shasta, California
Sales Office at Anderson, California

STOP THAT CUSSIN'!
3 of your dry kiln problems can be whipped by these remarkable new Universal products
1
Uni-Seal KILN DOOR GASKET
A new formula butyl rubber —resistant to heat and oxidation. Lasts several times as long as gaskets previously used.
it LASTS!
2
Uni-Seal DOOR GASKET CEMENT
A new specialized adhesive for bonding rubber to steel. Tough, resilient, waterproof. Holds for the life of the gasket.
STAYS STUCK!
3
Uni-Coat RUST PREVENTIVE COATING
Amazingly tough, stable, impermeable compound of new synthetic resins. It "armors" steel against heat, steam, and most corrosive chemicals.
it REALLY STOPS RUST!
(Ask for the "3 Corkers" folder.)
by the makers of the famous
Universal
KILN DOORS and DOOR CARRIERS
UNIVERSAL DOOR CARRIER, INC.
1117 Cornell Ave., Indianapolis 2, Indiana
"SPECIALISTS IN KILN CLOSURE EQUIPMENT—SINCE 1904"

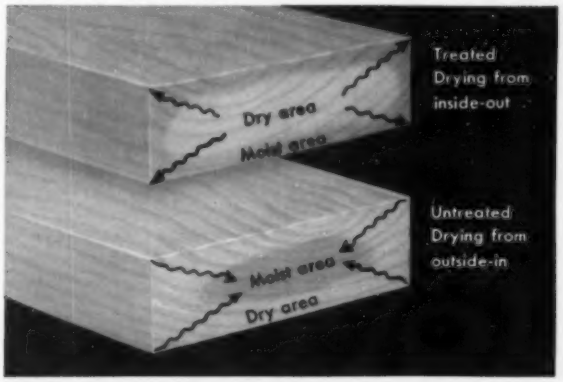
Leading manufacturers insist on Morton Lumber Cure treated lumber



The International Furniture Company, one of the leading furniture manufacturing companies, and makers of the sofa frame shown above, has been using Morton Lumber Cure treated lumber since 1948. International has found Morton Lumber Cure greatly increases yield; reduces end checking, surface checking, and tear-outs.

Hundreds of fabricators now insist on lumber that has been treated with Morton Lumber Cure. They know from experience Morton Lumber Cure increases utilization of rough cut lumber. Lumber also can be dried faster, kiln time and expense are reduced, with a more rapid turnover of inventory and capital.

What's more, Morton Lumber Cure is compatible with stain-preventing agents . . . will not affect gluability . . . machinability . . . color or finish. Morton Lumber Cure is non-toxic and non-corrosive.



How Morton Lumber Cure Works • Morton Lumber Cure reverses the normal drying action. Untreated lumber dries from the outside in. Morton Lumber Cure dries lumber from the *inside out*. This controlled drying greatly reduces checks, honeycomb, warping, and other types of wasteful surface and interior degrade.

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Tool Division. Replacing him in Oklahoma City as district sales manager is **Dearl J. Speck** who has just joined Rockwell along with **Elmer D. Hartig**, who is Iowa-Illinois district sales manager.

Orville Mowery has been appointed chief engineer of G. M. Diehl Machine Works, Inc., Wabash, Ind. Another appointment announced was that of **F. J. Mooney** as service engineer, working primarily on moulders.

O. Mowery

R. A. Bintz

L. Klempner

Robert A. Bintz and **Lester Klempner** have been elected vice-presidents of National Starch Products, Inc., New York. Mr. Blintz joined the firm in 1939 and lately has been assistant to the vice-president of manufacturing. Mr. Klempner has been with National Starch since 1933 and is manager of sales for the eastern division.

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SOUTHERN PLASWOOD CORPORATION
HOPE, ARKANSAS

Scarf Joints

Continued from Page 22

members in two or more segments and then splice them at the erection site, it might be possible to expedite the building program, achieve financial savings, and obtain better control of the laminated product.

In a study of this problem at the U. S. Forest Products Laboratory, various methods of splicing a large laminated member were considered. Mechanical splices using connectors, bolts, and splice plates were one possibility, but the most promising method appeared to be the glued plain scarf joint, which has long been recognized as an effective method of splicing small members.

Two separate studies were made at the U. S. Forest Products Laboratory to evaluate the effectiveness of the glued scarf joint.

The first series of tests was made on eight 6 x 6 in. straight-grained, laminated white oak beams spliced with a vertical plain scarf joint at the center. The beams were sawn to a 1 in 12 slope with a bandsaw, and the scarfed surfaces were prepared for gluing with ordinary hand tools, including a hand plane, square, and straightedge.

Each surface was smoothed to a maximum variation of about 0.004 in. The two sections were glued together with a resorcinol type of adhesive employing a liquid formaldehyde hardener. Cauls and saddle clamps were used to obtain a glue-line pressure of at least 200 p.s.i., and the glue was cured for about 6 hours at a glue-line temperature of 150°F. The beams were tested in static bending, and two-point loading was used so that the scarfed area was under an approximately uniform bending moment.

The primary failure was in tension in the outer one or two laminations, and there was no evidence that the scarf splice had any influence on the failure of the beams. Also, the spliced beams and the unspliced control beams had about the same mechanical properties.

The second study involved the splicing of two large curved laminated oak members. Unit Structures, Inc., of Peshtigo, Wis., and Bellingham Shipyards, Bellingham, Wash., cooperated in this study, each furnishing material, equipment, plant facilities, and personnel required to splice one large laminated member. An experimental splice was made in each member at a point of curvature, and required the cutting, preparation, and

gluing of scarfed surfaces of over 1,000 sq. in.

Each arch was sawn in half at a slope of 1 in 12. Straight-edge oak guide strips were carefully nailed along each scarf to obtain two planes which were exactly parallel, and the sawn surface was machined smooth and true with a portable router mounted on a flat and rigid wood block (Fig. 1). The maximum variation within each scarfed surface was about 0.003 in. The scarf was glued with a resorcinol adhesive and clamped between cauls (Fig. 2) to obtain a glue-line pressure of at least 200 p.s.i. The glue was cured in a curing chamber; it was estimated that the glue-line temperature was at or above 150° F. for at least 6 hours.

The center section of the arch containing the splice was then tested in static bending. Two-point loading was applied (Fig. 3) to subject the spliced area to an approximately uniform bending moment. The first arch section failed at a calculated modulus of rupture of 9,500 p.s.i., and the second at 8,970 p.s.i. In each case, the splice did not appear to have any effect upon the maximum load obtained; failure was due to other factors in the individual laminations of the member.

After completion of the static bending tests, block-shear and delamination test specimens were cut from the spliced area which had not been noticeably damaged in the bending test. The block-shear tests were made to evaluate the strength of the glue bond in the splice. All tests showed shear strength values above the minimum military requirements for white oak and, more important, a very high percentage of wood failure.

The accelerated delamination tests, which involved several cycles of soaking and rapid drying in accordance with military specifications were intended to simulate severe service conditions. The results of these tests showed only small percentages of glue-line delamination and indicated that the joint will be durable under service conditions.

All of the above tests on glued splices were evaluated within a few weeks after the splice was made. Obviously, it is logical to question what will happen after several years of exposure to varying moisture conditions. Sections of apparently undamaged beams containing the splice are being subjected to outdoor weathering on the exposure racks at the Forest Products Laboratory. The eight beams of the first series of tests have now been exposed outdoors for more than four years. There is negligible delamination of the scarf joint in seven of these beams.

The other beam has delaminated on the exposed face for a length of about 16 in. and to a depth of about ¾ in. at the midlength of the scarf; the remainder of the scarf joint shows no delamination. Sections of both arches containing the splice have also been subjected to outdoor weathering for about two years, and delamination of the scarf joints is negligible.

Further observations on the effect of outdoor weathering will be made periodically, but these observations will be limited to a relatively small number of specimens and will take place over a long period of time.

Although the delamination test is designed to predict durability of glued joints, only long-time behavior under service conditions will give an accurate evaluation of the glued scarf joint for large members. However, from the results of the block-shear and accelerated delamination tests, and from the early evidence observed in outdoor weathering, it seems reasonable to believe that glued scarf joints in large sections will perform satisfactorily after long periods of outdoor exposure or other severe service conditions.

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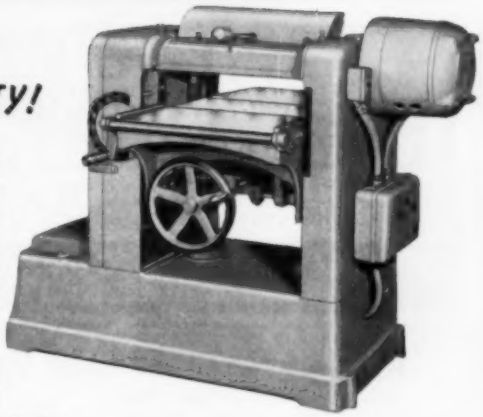

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Noise in Woodworking
Continued from Page 32

sharpening the cutting edges of the planer.

Interestingly the frequency changed, while the shaper was surfacing the oak, but the over-all level remained the same. Also the employee working with the planer thought the noise of the planer running empty was louder than when being fed. This is because the same noise level appears to be lowered as the frequency decreases. The noise of the planer with feed was less annoying to the employee because the peak levels were fairly constant through a greater frequency range than when running empty.

The next item is the transmission of noise from the source by a solid. The noise from woodworking equipment will sometimes carry into other areas at high levels if it is fastened to the floor, the floor acting as a sounding board in this instance. Careful selection of vibration mounts can reduce this noise.

Directivity is sometimes a factor in noise control. The noise may not radiate equally in all directions from the source. For instance, the levels measused at the infeed, outfeed, and sides of a sticker were 99, 104, and 101 respectively. Sound control could be accomplished by acoustical treatment at the outfeed end of the sticker.

In general, noise may be controlled by: (1) Machine isolation, where possible; (2) Machine enclosure, where possible; (3) In the case of new machines, selection is important; (4) Proper maintenance of equipment and cutting edges; (5) Proper design or acoustical treatment of ventilation ducts and capture slots; (6) Installation of dampening materials; (7) Vibration mountings; (8) Use of sound absorbing materials; (9) By the use of ear protectors.

Noise control is important to: (1) Hearing conservation; (2) Good public relations with your neighbor; (3) The promotion of sales by the manufacturers of woodworking equipment.

Each piece of noise producing equipment is a problem in itself and must be so treated. Noise control measures that will work for one noise source may not work for a similar noise source.

Noise control, after good maintenance procedures are followed, becomes proportionately related to the amount of energy, initiative, and money that is directed toward this problem.

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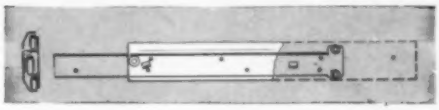

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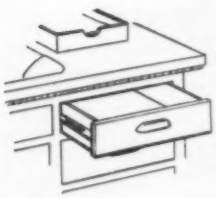

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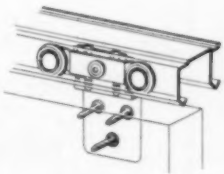

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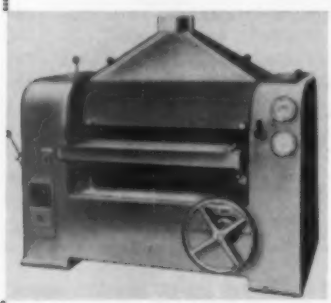

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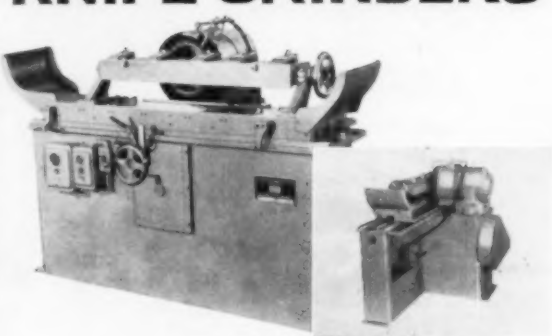

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Wood Salutes

LAWRENCE D. KELLOGG

PERHAPS NO ONE in the wood industry today has given more unselfishly of his time for the good of the industry—whether it be to serve as an officer or member of the board of directors of an industry association, to represent the industry on a war emergency control board, or to devote time, money and effort for the good of all in research in wood waste utilization—than Lawrence D. Kellogg.

Note some of his industry activities: Director of the National Hardwood Lumber Association, director of the Southern Pine Association, currently president of the National Lumber Manufacturers Association, director and president of the Southern Hardwood Producers, Inc., director of Timber Engineering Co.

As chairman of the Southern Hardwood Industry Defense Committee, Larry Kellogg served as chief of the Hardwood Section of the Lumber and Wood Products Branch, OPS. In March, 1951, he performed outstanding service to the entire hardwood lumber industry in developing fair and reasonable price regulations during the Korean emergency. He remained in that position on a full-time basis until all regulations were removed and continued in an advisory capacity until lumber was decontrolled in February, 1953.

Lawrence Kellogg was born in 1902 in Rusk County, Wis., where his father operated a sawmill. His family moved to Rice Lake, Wis., where he attended the early grades and in 1913 the family moved to Minneapolis where he graduated from West High School.

His earliest connection with actual work in the lumber industry was the operation of a sawmill at Little Falls, Minn. He went to Louisiana in 1930 to be associated with his older brothers in the Kellogg Lumber Co., Inc. He had supervision of mills at Parkdale, Ark., Fondale, La., and Alexandria, La., at different times. In 1944 the operations were split and he took the Alexandria, La., plant and formed the L. D. Kellogg Lumber Co., Inc., which he presently operates. Later he acquired a mill at Simmesport, La.

In recent years he has been very active and devoted considerable time to research to promote the utilization of wood waste.

In addition to the lumber business, he is interested in wholesale oil and gasoline business and also has two bottling plants in Texas.

Mr. Kellogg was married in 1930 and has two children—a daughter, wife of Dr. Ed Banks, who lives in Alexandria and has two children, and a son who is presently attending Louisiana Polytechnic Institute, Ruston, La.

His main hobby and diversion is fishing and for years he has maintained a boat on the Gulf Coast. He also has a summer home at Waloon Lake, Mich.

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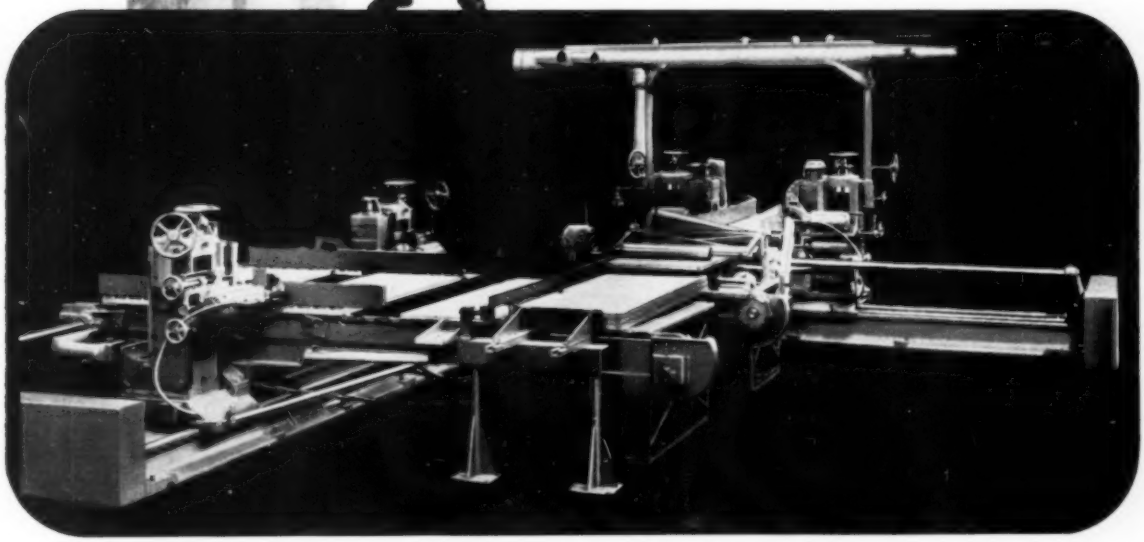

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